

# **Personas in User-Centered Design of University Websites**

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This thesis is focused on multicultural user personas as a method to design university websites with the user in mind. The relevance of the topic is stressed by the launch of Tampere3, Tampere higher education community which makes for a merger between the University of Tampere, Tampere University of Technology and Tampere University of Applied Sciences. The accent on cultural components in student persona descriptions is derived from the importance of intercultural competence. Since university websites are significant in promoting studying abroad to students, the way the website introduces its study options is crucial.

The thesis is an exploratory qualitative study. Both Finnish and international students were engaged into focus groups for Tampere3 website user personas creation. As a result, I learnt what the personas should be to reflect various students' needs, goals, motivations and frustrations. Generally, there is no contradiction between Finnish and international students as users of the university website. In final persona descriptions their cultural backgrounds were not attributed more importance than their academic status. Besides, I was interested if the personas could be approved by developers' team in the process of designing of Tampere3 website. An interview and a questionnaire were used as developers' feedback collection instruments. The findings show that applying personas could have changed at least the process, if not the results of the team's work. Although the team considered the method at the beginning and created personas, these intentions were not enough to make them work. Personas were not rejected deliberately, but the motivation to use them was not enough to adhere to the method throughout the project.

Few conclusions can be drawn with the findings: apparently, a project team needs to have more resources (time, efforts, motivation) to make use of personas as compared to dozens of other methods. However, it neither disproves personas' effectiveness when they are applied properly nor means that other methods yield better results. The lack of motivation to use the method took place because focusing on the users was not the main priority the team had. The methods the team chose corresponded to their possibilities to invest into the user experience.

Key words and terms: personas, user experience, university websites, cross-cultural design

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## 1. Introduction

As claimed by the United Nations Educational, Scientific and Cultural Organization (UNESCO, 2010), more than 2.5 million students are studying abroad and by estimate the number of international students will increase to roughly 7 million by 2020. It means that soon 7 million of foreigners will be using university websites and it might be the first experience about a university they will potentially study at. (Altbach et al., 2009)

Enhancement of studying abroad has the capacity to boost the competitiveness of universities. Intercultural competence is commonly considered as a valuable outcome for students, and scholars work on defining and promoting intercultural competences within the study abroad framework. It is essential to study how university websites are portrayed in international students' eyes. (Apperson, 2015)

While the desire of most major commercial companies to make a single product work worldwide is economic (Fernandes, 1995), the principal benefit to Finnish universities from international students is not only financial. They deliver a rich cultural exchange for students and contribute to maintaining of demographic dependency ratio. It means that they are needed to balance the amount of people working and paying taxes with the people who are underage or have retired (Ferm, 2017).

Finnish universities are going to enroll about 100,000 foreign students within a new project with an ambitious goal to promote the country's international profile (Marsh, 2017). The international students not only sustain the education system but also bring wealth to the nation. The country is interested in utilizing the brain gain (Teivainen, 2018).

The access to the Internet is available almost worldwide, but one cannot ignore one key factor: culture. This is always a great challenge to create a website for a university with so many different audiences. Although people of different nationalities can interact there with the website it should not be mistaken for the sign of a steady effective outcome of an interaction (St. Amant, 2005). Instead, cultural differences may slow down, mislead, or even cease multinational online activities (information seeking, applying for the university) in unexpected ways. It can happen because people of different culture may expect to get different experience of using a website.

The educational institutions' market is huge for potential students. The reputation and perceived quality of an educational institution are intertwined with the quality of its official website, all of which can have an impact on the potential student's enrollment decision (Hidayanto et al., 2015). For universities, it is vital to pay attention to the usability of their official websites and to improve the level of visitor satisfaction.

Usability of a website is one of the key factors indicating its quality (Bogers and Wernersen, 2014). It maps out to what extent a website is effective, easy to use, easy to

learn, efficient and satisfying to users. Usability refers mostly to the functionality of the website. Evaluation of usability promotes the way the users learn and interact with a website to fulfil their needs as well as the potential of the website to have users satisfied with this process. To evaluate a website usability, designers employ a variety of methods that collect feedback from users about a website prototype or a launched website. One of these methods is called user persona. (Issa and Isaias, 2015)

The goal of this thesis is to explore the applicability of the persona method to user-centered design of university websites. User-centered design is a framework of processes where usability goals, user personalities, environments, tasks and workflow of a website are prioritized throughout the whole designing process (Mifsud, 2011). University of Tampere, Tampere University of Technology and Tampere University of Applied Science are going to merge into Tampere3 by the end of 2018. Tampere3 website needs to be designed to help people of different backgrounds, both Finnish and international, to learn about study programmes, student life, professors and how to become applicants.

This thesis describes the process of creating student personas for the Tampere higher education community. It aims to answer the questions what are the benefits and limitations of the method and what a persona has to be to help the developers to understand the students' needs. Throughout the literature review and case study I elaborate on what parts university website personas should have, and what details they need to contain, especially whether the cultural attributes should be part of the persona description, also discuss personas as a method for the website developers to focus effortlessly on the users of multicultural backgrounds, would personas fit into the team's work, how demanding applying the persona profiles would be in comparison with other methods and to what extent the efforts would worth the outcome.

In Chapter 2 I describe the literature review on the topic. Chapters 3 addresses the methods I chose to answer the research questions. Chapter 4 reports the findings about students' and developers' views, interpretation of the results. Finally, in Chapters 5 and 6 I discuss the whole research process, what I have learnt and draw the conclusions accordingly.

## 2. Literature Review

Next we discuss research and writings carried out on the topic of persona method: its history, guidelines for creating and applying them, their evaluation and criticism. In order to answer the research questions, the persona method is examined in the context of university websites design. We introduce the defining key terms and concepts there to put a theoretical framework as a lead in to my own study which is described in depth in the following chapters.

### 2.1. Usability and User Experience

To introduce the concept of user experience and state the difference between it and usability, there are definitions given by the International Organisation for Standardisation. ISO 9241-11 (1998) defines usability as “effectiveness, efficiency and satisfaction with which specified users achieve specified goals in particular environments” whereas according to ISO 9241-210 (2010) user experience deals with “all aspects of the user’s experience when interacting with the product, service, environment or facility”. The concept of usability can be communicated with a question “Can the user accomplish their goal?” and the concept of user experience with “Did the user have as enjoyable experience as possible?” (Mifsud, 2011).

While usability mainly concerns those team members who are engaged with the user interface design of a website, user experience demands the collaborative and well-orchestrated effort of the project members from different departments including engineers, marketing managers, graphical and interface designers, as well as engaged outside companies. (Mifsud, 2011)

The idea of usability is narrower than the one of user experience as it mostly targets fulfilment of purposes as a result of a user interaction with a website. Conversely, Stewart (2008) defined user experience as a “consequence of the presentation, functionality, system performance, interactive behaviour, and assistive capabilities of the interactive system” (Mifsud, 2011). Indeed, atop of usability user experience has components like human factors, design, ergonomics, HCI, accessibility, marketing and so on. Some practitioners divide user experience into utility, usability, desirability and brand experience (Mifsud, 2011).

There is a diversity of research methods applicable to user experience, varying between tried-and-true methods like lab-based usability studies to the freshly developed ones, such like unmoderated online UX assessments. Table 1 describes UX methods and activities valid for different project stages. The methods need to be chosen according to the time limits, budget, system maturity, type of product or service, and the ongoing top concerns. It is recommended to apply various or alternating methods each product cycle since they target different aims and challenges (Farrell, 2017)

Table 1. List of research methods applicable to 4 stages of product design. (Farrell, 2017)

Top UX Research Methods	
Discover	<ul style="list-style-type: none"> <li>• Field study</li> <li>• Diary study</li> <li>• User interview</li> <li>• Stakeholder interview</li> <li>• Requirements &amp; constraints gathering</li> </ul>
Explore	<ul style="list-style-type: none"> <li>• Competitive analysis</li> <li>• Design review</li> <li>• Persona building</li> <li>• Task analysis</li> <li>• Journey mapping</li> <li>• Prototype feedback &amp; testing (clickable or paper prototypes)</li> <li>• Write user stories</li> <li>• Card sorting</li> </ul>
Test	<ul style="list-style-type: none"> <li>• Qualitative usability testing (in-person or remote)</li> <li>• Benchmark testing</li> <li>• Accessibility evaluation</li> </ul>
Listen	<ul style="list-style-type: none"> <li>• Survey</li> <li>• Analytics review</li> <li>• Search-log analysis</li> <li>• Usability-bug review</li> <li>• Frequently-asked-questions (FAQ) review</li> </ul>

Although trying to employ the full range of research methods on a given project is neither realistic nor reasonable, in most cases combining few might be beneficial. Each method can have its adherents and those designers who strongly oppose it, but it is crucial to shape one's opinion only if the method has been used properly and to its full potential.

Next, we will focus on personas, which is mentioned among the exploratory methods in Table 1. Specifically, our interest lies in what the persona method offers in web-design with the emphasis on developers' work.

## 2.2. History of Personas

The idea of persona was developed by an American software designer and programmer Alan Cooper. The term was first mentioned in 1999 (Cooper, 1999), however, for quite a while the technique (or techniques of the kind) had been practiced in various manners and titled variously.

The background of personas is rooted in 1983 (Cooper, 2008), when Cooper first practiced interviewing target audience of the service he was working at with great attention to the potentially primary user. Cooper nominated her to be the basis for his

first, primitive, persona and held talks, play-acting a project manager based on the persona description.

This project as well as a few following ones polished the new personas method to become a commercial success. First true goal-oriented personas were created when Cooper discovered that the product potential is much deeper than the programmers could define. A half-dozen of intended customers were interviewed by him and some clear patterns emerged although the variation among them was dramatic. The users fell into three distinct groups, differentiated by their goals, tasks, and skill levels. The user models were given names and engineers began to talk about “what Cynthia would do” or “whether Chuck could understand” some aspect of the user interface. (Cooper, 2008)

Within next few years Cooper’s team perfected the technique, however designing for user experience had been ignored until early noughties. Since the method Cooper practiced was rather unfamiliar, he included the description of the goal-directed methodology into his book “The Inmates are Running the Asylum” (Cooper, 1999).

Many practitioners preceeded Cooper in introducing persona-like descriptions into ethnographic user research to enhance the designing process. Product marketing had started applying persona-like profiles long ago. They created user architypes to define a market and to determine whom the product is going to be sold to (Sissors, 1966). Later on, various methods of representing a needed market segment through persona-like descriptions were suggested (Guðjónsdóttir, 2010). Whatever the efforts were, all of them have the same aim to put the user needs first, not the technology itself. User profiles were looked upon as detailed synopses of the materials they were imported from (Guðjónsdóttir, 2010). Beyer and Holtzblatt (1998) resort to the idea of user differentiation and emphasized that the user roles do not need to look or sound like real human beings, but represent a function, relationship or job description. There were plenty of efforts more but none of them depict the personas in such a in-depth and thorough manner like Cooper did it in his work. One can grasp the idea of personas in a single flesh but mastering the technique takes months or years. A large number of designers have applied guidelines on personas (Cooper, 1999), but a full “Persona How-to” manual has yet to be developed. However, attempts to collect manuals exist, for instance by Nielsen (2018).

### **2.3. What Are Personas**

Personas are representations of needs and requirements of large groups of users in the form of fictitious characters with their motivations, goals and traits of character (Cooper et al., 2014; Cooper, 1999; Pruitt and Adlin, 2006). Despite personas are fictitious, their descriptions are synthesized directly from observations and findings from the real audience. Righi and James (2007) compared the effect personas create with main characters in movies whose behaviour throughout the story becomes predictable since the audience form their first impression.



For a designer creating personas it is important to conduct a thorough user research, not just reflect and express subjective opinions about them. Interestingly, there are authors (Danzico, 2007) who believe that even artificial personas are better than no personas at all (Guðjónsdóttir, 2010). As stand-ins for the intended user groups, personas take part in prototyping, evaluation and other activities to build consensus and commitment to the design. (Baty, 2009)

Personas are supposed to permanently remind of the users to project team members, throughout all their activities. The principle is to design for peculiar people with peculiar needs to meet the demands of a variety of users (Cooper et al., 2014). Persona profiles function as a starting point for user investigation to design for (Dupree et al., 2018).

When designers broadly extend a product's functionality to include all possible needed options, the cognitive load and navigational overhead are increased dramatically for the users. Commonly attempts to adjust to each and all yield a reverse effect and satisfy nobody. It is more effective to discover and accomplish the needs of the relevant audience than to poorly meet the needs of everyone (Lidwell et al., 2010). To make personas work, the team needs to exhibit great skills in recognizing the important frequent patterns in users' behavior and transform them into archetypical profiles that stand for a wide range of users (Cooper et al., 2014).

Personas let the designers focus on a manageable set of users and feel safe since they represent the target group. It is of utmost importance to recognize the right people to target designing for and put a priority on them. Personas communicate information about the right users in a catchy, personal and emotional way. Field data they are based on makes personas deep and rich of real user experience behind them, while the form of individual stories makes them easy to comprehend. (Beyer and Holtzblatt, 1998)

The personified nature of personas contributes a lot to their success as user models. Personas are activated when they are given a name, an appearance, a goal, a personality. Nameable, real and recognizable personas can be easily recalled and invoked during the project development (Dupree et al., 2018). Based on the persona description, one should understand the situation and set current goals. The purpose of it is to understand users' lives, motivations and environments, and apply this knowledge to make a design decision for a successful product. These user models provide designers with a particular mode of thought and communication about how users behave, how they think, what they want to achieve and why (Cooper et al., 2014). There are few types of personas depending on their goals and importance: primary, secondary, supplemental, customer, served and negative (Cooper et al., 2014).

## **2.4. How to Create Personas**

The enabler of personas is a comprehensive user research, through methods the designers find most relevant in each particular case, such as interviews, observations, focus groups and workshops, which comes out in detailed understanding of the users' needs and

motivation. Frequent patterns (in opinions, behaviors, motivations etc.) fetched out in the course of user research build the foundation for the personas. However, the material gathered via user research usually are to be supplemented with other materials, like literature on the users, their life, work and so on. Not only in-depth analysis of the gathered information but also creativity is essential while creating personas. (Guðjónsdóttir, 2010)

Cooper et al. (2014) suggest instructions of persona creation described below. First, they encourage to establish persona hypotheses before beginning the user research, so that a hypothesis would combine all initial assumptions about a user. This should be made as a descriptive material in order to set the foundation of the forthcoming interviews and other persona creation activities. The hypothesis is not designed for the end user, but for the researcher and participants of the study. Dupree et al. (2018) note that having an example can help a lot because a typical user does not know what he/she wants and what challenge needs to be solved. Moreover, users may not know what is technically feasible but their desired outcomes can be unveiled when they see the visualized model in analog with the “I’ll know it when I see it” principle (Dupree et al., 2018). Also the researcher can create an ad hoc persona, which is a full user persona that is not based on verified information and that can identify potential user subgroups and pursue subjects within those categories (Guillermo, 2016).

After hypothesizing the researcher proceeds to conducting user research. As the user research progresses, the persona hypothesis should be corrected and refined. During the research activities participants’ set of behavioral variables (e.g., one participant learns the news from friends, while the other one does from social networks) is to be developed and mapped. Mapping is done with a range of behavioral variables that keep altering all the time when the study participant introduces some new relevant behaviors of to the project. The next step is to find the overlaps in findings with the help of the mapping. They are the basis for the future personas. Then Cooper et al. (2014) recommend to write down characteristics and goals for the personas on the basis of the data received on the user research. They contain age, sex, geographical information, details of the environment where the personas used to perform their work or leisure activities, how daily and weekly routine goes, their ongoing status and the way they perform their daily assignments. This is the phase when personas should be given their names, and it is essential to refer to them by these names henceforth. A believable persona has to have an appropriate name according to the name trends for the relevant age.

The goals of personas are derived from user research as well. Cooper et al. (2014) introduce three different types of goals: experience goals, end goals and life goals. Experience goals are about how the persona wants to feel when using the system, e.g. to have fun, to avoid feeling stupid etc. End goals are practical, they express what the persona commit to fulfil by using the system. Life goals are long-term, explaining why

the persona wants to use the system, what is the final stimulus. They are seldom appropriate, unless achieving the life goal is the key motivation for using the product. The developers' team should use all or some of these goals depending on each specific case. (Guðjónsdóttir, 2010)

Considering the doubts of project stakeholders who seem unconvinced of the method merits is important. While making persona description any factual mistakes or inaccurate details are inadmissible. The description of a persona should have enough details to be true to life, like a real person description. Otherwise the persona has a risk of becoming the “elastic user”, the one to be avoided (Cooper et al., 2014). Guðjónsdóttir (2010) mentions that Rönkkö et al. (2004) used the term the “shadow persona”, a changeable persona that accommodates itself over time and can become both a teenager and a middle-aged housekeeper as the case may be.

So far the process of persona creation is nearly over, except developing stories where a persona is shown accomplishing some particular or general daily activities. The stories may be part of the persona profiles as/or scenarios. One thing which is recommended before creating the narratives is choosing a persona picture to make it maximum real. Cooper et al. (2014) refer to writing scenarios as “the process of translating the knowledge about users into coherent design solutions”. They mention three kinds of scenarios: context scenarios, key path scenarios and validation scenarios (Guðjónsdóttir, 2010). The first one is about the context the persona is situated in when he or she performs the activities relevant for the system to be developed. They are relevant on product planning phase and consider frequency of use, duration of use, number of users on a single system etc. The scenario does not suggest any design solutions. The key path scenarios is about the persona's interaction with a product with the focus on the most significant user interaction and how the goals are achieved via it. This type of scenarios is relevant on development phase. And on the top of that, throughout the process, the design team uses validation scenarios to test the design solution in a variety of situations. They are usually less detailed and consist of asking a series of “what if ...” questions. (Cooper et al., 2014).

Sometimes the process of creating personas can be facilitated by “cultural material”, such as different artefacts originated from the culture where the users are active and practice the activity with a relevance to the system under development, e.g. books, newspapers, TV programs and so on. Cultural material especially helps when the access to the users is limited. Examining these objects using all senses can turn out to be inspiring. (Guðjónsdóttir, 2001)

Pruitt and Grudin (2003) describe how they had started each persona effort from findings gained during market segmentation studies. It included flashing out the top priority segments with field studies, focus groups, interviews and other user and marketing research. The team employed metrics around market size, historical revenue,

strategic and competitive placement to choose the segments to base the persona descriptions on. They kept the number of profiles feasible: 3 to 6 personas, according to the scale of product usage. International market information and accessibility information were included into the personas. Besides, the team developed one “anti-persona” to keep in mind what users the product is definitely not designed for.

The process that Pruitt and Grudin (2003) describe involved several people: product planners, usability engineers, interaction designers, market researchers, and technical writers. They created “foundation” documents for each persona to store the information about personas there. A foundation document included the following parts: overview, get to know, a day in the life, work activities, household and leisure activities, goals, fears, and aspirations, computer skills, knowledge, and abilities, market size and influence, demographic attributes, technology attributes, technology attitudes, communicating, international considerations, quotes and references.

It is important to mention that a persona description should contain details affecting design decisions, e.g., digital and work experience. There are some alternatives to the process Cooper et al. (2014) suggested, for example, some persona practitioners (Dupree et al., 2018) use grounded theory (Strauss and Corbin, 1990) instead of the behavioral variables and tag research material they gained during interviews, questionnaires etc. with codes to cluster. Thus, Dupree et al. (2018) used the grounded analysis steps to categorize the user space via persona creation. Besides, alongside with those who recommend using photographs for personas visualization, some persona practitioners adhere to illustrations (Long, 2009; Guðjónsdóttir, 2006) who believe that photos are less effective and introduce the risk of self-referential design.

## **2.5. Applying Personas**

There are two main ways to use the persona method: the first is as a communication device and the second is as a design aid (Guðjónsdóttir, 2010). There is no such a differentiation in literature but still the ways the personas have been used in different projects since the inception of the idea manifested this distinction. Pruitt and Grudin (2003) featured the way they had enriched applying personas to introduce the knowledge about users to project stakeholders. The distinction can be also slightly observed in Pruitt and Adlin (2006) description of a persona’s evolution: the idea incubation and getting all preparations ready, birth, maturing, adult stage, highlighting the crucial elements of a persona’s lifecycle during each phase.

In most cases the method is interpreted as an efficient tool of focusing on users’ needs and delivering the user research findings to the stakeholders. The persona material is turned to an instrument representing the group of target users and describing what they are like and what situations they find themselves in. Personas also demonstrate work and leisure activities the users carry out, according to what tasks the system is supposed to support. (Guðjónsdóttir, 2010; Pruitt and Grudin, 2003).

The reason why personas can function as a powerful communication device lies in how easy it is to concentrate on 3-5 people in comparison with reading reports describing details about the intended users (Pruitt and Adlin, 2006). Any project team member may happen to be erroneously opinionated or biased towards the users on a personal, cultural or corporate level and the others may even have no clue about it. Developing personas unites the team around a set of profiles maintaining the anonymity of users they represent and shielding them from the team's assumptions. At the same time, it keeps the project focused on a manageable number of intended users instead of on everyone (Cooper, 1999).

Personas serve as a guiding light for the team that indicates their way towards the target user group. This unobtrusive and natural orientation cue reminds everyone about the difference between the team members and the end users; and that their expectation and beliefs might differ (Long, 2009). User-centered design, opposed to self-referential and technically centered design is more challenging and sophisticated, but has better chances to succeed in good quality systems. The persona method is one of the ways not to arrive at design solutions on the basis of designers' needs and attitudes.

Understanding the users alone is not sufficient, since this understanding should facilitate the full developmental cycle. Personas help the designers to focus on the target users when the real representatives of them cannot be accessed. Guðjónsdóttir (2010) noticed that practically the profiles sometimes are more helpful for the project than humans since they are more consistent and have fewer "quirks and behavioral anomalies that interfere with the design process" (Cooper, 1999).

Guðjónsdóttir (2010) suggests that putting priorities, discussing and explaining design notions and features are easier when these are based on persona goals. First, they anonymize the users and can be easily addressed to during the project meetings. Secondly, the team can assess the design with personas. This can by no means totally replace the real user testing though.

The requirement for making personas beneficial is their pauseless presence in a project and usage in discussions and presentations. Dupree et al. (2018) share the opinion that the biggest problems in practice of the use of personas come from not applying them in a proper manner from the very beginning of the project. Pruitt and Grudin (2003) described a project where the personas were constantly applied throughout the process. The project team launched a persona-based campaign with variations of posters, flyers, handouts and a few gimmicky promotional pieces, a website with the "foundation" documents, links to supporting research, related customer data and scenarios, and a load of devices for implementing the personas. Personas had their email addresses and each team member was sent a message with "Persona fact of the week" regularly as well as feedbacks about the design decisions which had been made having personas in mind. A feature-persona weighted priority matrix was applied to help to determine what features

to build in the product development cycle. The project team continued to revise, enrich and evaluate the set of personas as new data became available.

## **2.6. Personas Evaluation and Criticism**

Guðjónsdóttir (2010) mapped out two proof-points in favor of the persona method as a design aid. First, the persona profiles have a power to heighten the interest of project stakeholders and get them more involved than lists of the material about the users. Secondly, the storytelling component of the method deals with a visceral cognitive process of memorizing in human brain.

Grudin (2006) studied how the persona method can be explained psychologically. He discovered that comprehension of personas strengths can help designers to practice them better as well as choose the most suitable methods of applying them for the design process. The way humans naturally develop and interact with stand-ins of either real or fictional people can be illustrated by numerous cases of writers and actors using techniques like personas.

Statistical analysis or nameless descriptions of the user groups cannot get designers involved to the extent persona profiles can. They help to foresee the reaction of users in different circumstances and their ways of interacting with a product or service. Quesenbery (2006) shares the opinion that using persona profiles and creating scenarios about them establish a dialogue with human cognitive processes, since we share well-known traditions to tell stories, folktales, myths, history and so on across countries for communicating and learning. Stories can inspire and facilitate exploring different aspects of interaction as well as brainstorming on some new design solutions (Quesenbery and Brooks, 2010).

Furthermore, Reisberg (1997) had a research that proved that memorizing things is easier if they are delivered in the meaningful context. Just as stories are used as mnemonic devices to comprehend and remember important facts, persona descriptions come naturally to designers and help them to learn and remember their intended users' needs and choices. People tend to care more about how well the system under development functions when it is destined for personas.

Pruitt and Grudin (2003) outlined why personas are advantageous for the project with the psychological theory. From a very young age humans use partial knowledge to deduce, expect and predict from people around. Our behavior triggers anticipation of the others' reaction. Practicing personas invokes human's nature and introduces empathy to the development cycle.

Grudin (2006) noticed that in fact a lot of adherents of the method including Cooper gave personas credit for project success but did not try to probe deeper into the source of the method efficiency.

Blomquist and Arvola (2002) conducted a session of observing the project team members for twelve weeks in order to learn how they use personas. The observation

shown that the personas never fully blended in the designing process most likely because the team did not take part in their creation. If they had done so, there would have been better chances that the team knows the background material and believes stronger that the personas managed successfully representing the end users. Despite personas were not used much in the designing activities, they made a positive contribution to communicating who the users were, especially to people who joined the team later and needed to have a clue immediately about the goals of the project and the target user groups.

Later on, the researchers took up the idea of Blomquist and Arvola (2002) and assumed that to make the persona method more engaging they need to be developed in cooperation with the users themselves (Johansson and Messeter, 2005).

Personas have been proved to be useful in a plenty of cases. For example, Vestergaard et al. (2016) demonstrated how valuable personas can be for multicultural projects. The project they described dealt with a waste management system for soft plastic in an Indian countryside. The team used personas to keep a focus on users throughout the collaborative designing process. The personas were created with the help of ethnographic methods (observations, interviews, workshops and a film) to reach a good understanding of village dwellers. The success of the project was attributable to the personas which helped to discover the users' needs, interests, values and emotions. The team members were able to wade through the physical and cultural distance and enable a strongly contextualized design.

Pruitt and Grudin (2003) gave credits to the method, but emphasize it is more valuable when complements rather than replaces a bunch of other quantitative and qualitative usability tools. Personas magnify the power of other methods like scenarios, task analysis, ethnography and so on in participatory design and value-sensitive design. The benefits of the method are so that persona campaigns generate driving force for permanent concentration on the user. The persona effort can result in enhancing crossteam collaboration, synergy and communication. As a drawback, Pruitt and Grudin (2003) mention 'Persona mania', a temptation to overuse personas and mistake the method for a panacea.

On top of this, iterations of creating personas require a good deal of time to be done right. Not every project can afford it (Dupree et al., 2018). It is not exactly so that all UX designers like the method. Portigal (2008) is of the opinion that the persona method is a dangerous one considering the risk of misusing them. Personas might be misused to maintain a "distance from the people we design for" and to build "the facade of user-centeredness" (Guðjónsdóttir, 2010). The user researcher reported on personas as if the messy nature of human beings gives the green light to ways to represent the messiness of actual people (Portigal, 2008).

It is true that the method is not always the best solution to the project. For example, Rönkkö et al. (2004) intended to apply personas in a commercial project of developing mass-market software for mobile devices. Both customers and the project members reacted favorably towards the method, yet the project failed, owing to patterns according to which the telecom branch functioned and its “patterns of power” (Rönkkö et al. 2004). One of the key reasons was apparently related to the branch ideology which contradicted the persona goals. Since the telecom branch did focus mostly on the market and the competition, the end-users were not prioritized. (Guðjónsdóttir, 2010)

Rönkkö et al. (2004) distinguished one more issue related to using personas. The project members were confused and opposed to each other about whether the personas were for the marketing team or the user experience design team. It happened because a target the persona descriptions were supposed to have in the project had not been defined clearly and mentioned both design purposes and marketing and sales purposes. Trying to fulfil both led to a tight corner.

Chapman and Milham (2006) do not believe that persona descriptions have the power to portray real users and that, one way or another, there is not enough evidence that the persona profiles are accurate description of the intended user groups. Chapman et al. (2008) urged to find more arguments for a relationship between personas and findings about users they are based on to name the method reliable. It comes into conflict with the opinion of Cooper (1999) who emphasized that being accurate is not that essential than being specific while creating personas since their biggest power centers around humans’ aptitude to remember the characters and stories, rather than around their details representing the user group precisely. Furthermore, Chapman et al. (2008) did not have their study directly addressing the value of the persona method so they acknowledged that “the personas method is claimed to lead to positive results and it is possible that the method could be useful for inspirational purposes”.

## **2.7. Personas in International Websites Development**

Personas can be used in design practices for developing international websites (Solomon, 2017). A number of UX designers seem to have an increasing interest in creating international personas (Madsen et al., 2015). However, number of studies about personas in a worldwide context is still limited since the overwhelming majority of personas are represented from a single culture at a time, which is a monocultural western perspective (Nielsen et al., 2013; Cabrero et al., 2016).

Hertzum et al. (2011) applied the repertory-grid technique to discover the way 48 participants from Denmark, China and India used of a variety of constructs in reporting their experience of using IT systems. The researchers did not find crucial difference across nationalities. Both researchers and practitioners found it challenging to discover better indicators of cultural background than nationality.



Cultural differences among the users of an international website can impact the approach to design the interface. There is a risk that one country may not share a lot of the same metaphors for actions with another country. People of different cultures may expect to get different experience of using a website; it can include positioning of the images on different pages (external links to advertisement included), menu bars and other design elements, organization of overall layout and so on. Furthermore, people from different countries may expect their own languages on a website to convey information. The ability of the website to attract and keep multicultural users can be markedly affected if its interface does not assist easy navigation regardless the users' backgrounds. (Getto and St. Amant, 2014)

A team creating a website might not predict anticipations of the users from other cultures. Web design can be highly influenced by cultural markers (Ogan, 2017), and website success depends largely on its design. Cultural markers are components of a website such as page layouts, data organization, colors, trust signs, use of metaphor, navigation patterns, color combinations, language cues or images. Users from a particular website domain and country prefer, share, understand and accept particular cultural markers in the web (Mushtaha and De Troyer, 2012).

Fernandes (1995) also named appropriateness of features and taste as main areas that are particularly problematic for user interfaces to work internationally. There can be some global attributes of culture (e.g., dominant regulations, economies, institutions) that are significant to communication design. Users may occupy different places on spectrum from collectivist to individualist identities and the values can come from cultural crosspollination, customs, histories of particular communities etc. (Getto and St. Amant, 2014). Furthermore, there can be different availability of technologies in a given region and limitations of the learning process that can impose on its use. (Würtz, 2017)

Callahan (2005) concludes that having an exposure to Western culture facilitates a person's lesser pressure from cultural differences. Nawaz and Clemmensen (2013) examined 60 HCI research studies on website usability in Asia from 2001 to 2011. The amount of publications on website usability in Asia has expanded in ten years, but there are still many gaps in the literature. For example, the scholars discovered that researches did not sufficiently make use of qualitative measurements when evaluating, few works had been carried out in Western Asia and so on. Also, cultural theories were put behind cognitive and psychological theories to study website usability in Asia. It means that there is not enough data on what are the specific features required for designing for Asian users, despite them constituting a significant share of product and serving market. Overall, no best practice has yet been invented and UX researchers are looking for an answer how to introduce cultural attributes of users when designing an international product (Cousins, 2017).

Jensen et al. (2017) investigated UX researchers' strategies on practicing personas in multinational markets. Among other findings it was discovered that the UX researchers had confronted a lot of similarities across users of different nationalities at a personal level. Also, they laid emphasis on the fact that the most significant differences among users are usually rooted in fluctuations of the financial situation, education, legislation and social structure in various places rather than in national culture. The study also proves that there are usually two strategies the UX researchers employ while developing international persona profiles: they either create them according to nationalities or according to educational backgrounds, occupations, etc. The first strategy usually suggests that there is one persona per country or region covered by the user study. Otherwise stated, this approach results in country-specific persona descriptions and, accordingly, each persona profile stands for a whole country. The second approach usually takes education or profession as a basis; however, it might be learning patterns, digital skills, autonomy at the workplace and so on. Besides, three ways were identified to present international persona profiles: a culturally neutral, a culturally specific and an approach that challenges stereotypes.

The first approach of the practitioners mitigates any differences referring to culture as well as culturally specific places to have a persona as generalized as they can. Geographical references and names are totally excluded from the profiles. Instead, the accent is given to persona's special habits and values. Culturally neutral personas have pictures that carry very little background that may put the persona in a particular context. (Jensen et al., 2017)

UX researchers who create one persona for one country usually adhere to this approach for every strategic market even when the empirical data do not advocate this classification (Jensen et al., 2017). The lack of correspondence with data results which generally is a criterion for persona creation is typically explained by an intention to communicate the diversity of the users. Cultural peculiarities of personas of the type are highlighted with emphatic pictures that demonstrate their context with names from the certain region. (Pruitt and Adlin, 2006)

The third way centers around using personas to feature users' diversity but at the same time challenge stereotypes about them. One of the participants in the research of Jensen et al. (2017) put it so that she spent plenty of efforts trying to find proper photos for every persona and picks the ones that challenge pre-configured attitudes: "Generally for personas in firms: the top manager is a woman; the creative leader is a dark man. That is how you try to challenge stereotypes". The same as in the culturally specific personas, this manner of developing them does not always feature the empirical findings, still some designers deliberately employ it to address the issue of stereotypical assumptions.

The research above attests to that there is apparently ambiguity about the concept of culture. On the one hand, it can be defined as a cohesion uniting all members of a national

culture by means of habits, values, and norms which are barely changeable and pass on from generation to generation (Hofstede et al., 2010: 6). In this case, culturally specific personas have differences based on national classification prioritized and other features sidelined.

On the other hand, culture can be defined more dynamic, changeable, with its members negotiating their values. This means that they indeed do share habits, rules, experiences, and values with some individuals, but never with everybody. Factors like education, social standing, sex, financial health, ethnicity, and current environment influence users' diversity. Viewed in this way, culture is never enough to explain the way an individual uses a service or a product. (Jensen et al., 2017)

Halualani et al. (2009) explain how the discussions above has superposed with the field of intercultural communication. The first turning point is criticism of the attributed speculations of race-less, gender-less, and class-absent individualism starting to hamper the empirical nature of studies in the discipline. In case of persona development, a persona cannot be race-less, gender-less, and class-less. The second point is briefly described as a demand of dealing with culture in a context of history. The third point is a criticism of national culture as an explanation of variations among communicators. The last turning point is a criticism of imposing a space for agreement or struggle on culture. Therefore, while seeing culture dynamic, developing international personas is more about a historical context and features people share across national cultures. (Jensen et al., 2017)

As a conclusion, UX explorers are doing empirical activities to research on how to deliver the exposure about international end users. Still, there is no formula how to incorporate both national cultural differences and cross-cultural similarities into persona profiles. Users across countries share a lot of features, still persona descriptions are full of cultural differences. This equivoque about culture reflects globalization: focusing on cultural differences resembles the national, local process, when concentrating at similarities mirrors the global process. (Jensen et al., 2017)

## **2.8. Students' Needs**

One of the specific examples of international websites is university websites. They share the particular nature of what has been mentioned in Subchapter 2.7 about multicultural users. The university website is a crucial part of recruiting students, and it is apparently becoming more essential since prospect students rely more on online materials while choosing the university to apply to. The impression the university website makes is so significant that 92% of students said they might be disappointed with a university and might not consider applying there any longer in case they didn't find the information they needed on the school's website. (Meyer and Jones, 2011)

A list of all prospective students' needs is consistent across all universities and consists of: tuition/cost/fees, degree or course information (admission, duration,

prerequisites, commencement date, study mode), career outcomes (future potential income, connections with employers), scholarships, campus life (extracurricular activities, recreation and events), assistantship opportunities, details on faculty, staff and contact information (Lang et al., 2015; Meyer and Jones, 2011). Still there are pieces of important information which are hard or impossible to find, e.g. findings by Meyer (2008) proved that it takes three or four clicks to reach information on tuition and fees for doctoral or research institutions, one or two clicks for community colleges, but is not found at all in 15% of the websites. It supported the fact that the university's "virtual face" might be entirely usable for insiders, yet frustrating to those users who have never come across the university website before.

Alternative entry and mature students often look for additional information to suit their specific needs. In general, it is critical for them to find a university that provides them with flexibility. This group needs to know all of the course commencement dates. They also need all the mode of (course) delivery options listed e.g. full time/part time, online/external/on campus, as well as time on campus (contact hours). Scholarship information is of utmost importance for currently working mature aged perspective students. (Lang et al., 2015)

Meyer (2008) developed a methodology to find out how well higher education establishments' home pages are accomplished and how they were making use of. The methodology relied on objective measures rather than user input. Meyer (2008) shows that 34% of the links on the home pages handled student needs and the rest 43% were providing either services to faculty and staff or functions aligned with operating the university, in other words, fall into the category of "functionality". (Meyer and Jones, 2011)

Table 2 shows the main messages students see when they look at their institutions' home pages (Meyer and Jones, 2011). The responses are presented in groups and by the number of mentions.

Table 2. Main messages of the university home pages (Meyer and Jones, 2011).

Messages	Number of mentions
"Here's important information "	19
"Here's what's going on or events to do" or "a lot happens here"	16
Marketing to new students or "this is the place to attend"	13
"Who we are" (branding, school colors, mascot, logo, mission)	11
"Great things faculty and students are doing"	8
"Research is important"	5
"Giving or donating is important"	
"Using social media (e.g., Facebook) to connect to students"	
"Diversity is valued"	4
"Student services are available"	
"The campus is picturesque"	2

As it can be seen in Table 2, university website homepages sometimes are not designed with the students in mind. The information students want and need to have within one click of the university's home page is often different from the information these pages actually contain. Based on the research with 12 universities in the USA and Australia, Lang et al. (2015) discovered numerous issues when users' needs for information were not met. About 11% of students who took part in the study by Meyer and Jones (2011) never found the information they needed and the search results were useless. Moreover, in cases when the information is found, it often requires skills and patience to reach it.

Future students use a university website as one of the primary tools to assess a university's reputation. They focus on whether the site has credible information up front such as fees, course details, and graduate success stories, may look into the professional standing of lecturers, want to see if a university has any prestigious industry linkages, and form their opinion about the university via visual site design of the website, a cutting edge modern looking website equals a cutting-edge modern university (Lang et al., 2015). The last fact is supported by a study by Adepoju and Osofisan (2008) which proved that attractive homepage and good background color contributed to students preferring Federal Universities of Technology Akure website to 2 others under comparison, along with their ability to perform tasks easily on it, fast download time and easily readable text.

Prospective higher degree research applicants seek out information on potential supervisors/experts to supervise their topic of interest or seek expertise in research areas depending on how clear they are about their research topic. They are also very interested in scholarships and stipends. When the data on future international students were examined, a unique subset of information they required in order to help them choose a university was discovered. Their needs include information on potential employment opportunities, recognition of their degree in their home country, clarification of university terminology (including abbreviations and acronyms) and page readability, and the level of safety in the city they will be living (Note: This is more important for parents and often increases after media report on incidents involving international students). Prospective students were also interested in living and city information (including public transportation options) and cultural heritage clubs at the university. (Lang et al., 2015)

Also, Wilson and Meyer (2009) had a research on interests of prospective African-American and Hispanic undergraduate students. They discovered that about the half of 40 universities chosen randomly did not have their websites supplemented by information on offices and other targeted services for minority students. It could mean that either these services were not available, or they were available but could not be found, which demonstrates to what extent the institutions appeal to minority students.

Despite the differences in the needs depending on users' backgrounds, the type of information needed relegates to is the same: material that supports students functioning

as students – regarding study programs, admissions, signing up for courses, libraries, navigating the forms, processes, and policies of being graduate students. Enrollees might be immature, not tech-savvy and lacking research abilities. Having information about applying, programs, deadlines buried deep within the website may not work in a university favor when people consider entering it.

## **2.9. Usability of University Websites**

Web usability is a key to facilitate communication between universities and their stakeholders (students, their parents, media representatives, faculty members, job hunters and so on). With our main focus on the student users, appropriate university websites intensify students' satisfaction, save their time and efforts, affect positively on reliability of institutions and benefit brands. The website functions as a delivery method for services that aids various tasks a student needs to carry out. It also serves as a platform through which a university can collaborate with its students (Mentes and Turan, 2012). Universities that give due consideration to a worthy user experience contribute to educational goals and get rewarding investment performance. (Hidayanto et al., 2015; Sherwin, 2016)

Usability tests have showed that there is still a lot of room for improvement (Sherwin, 2016): many university websites currently lag behind the usability standards established in the Internet. Even yet-to-be students who are not necessarily experienced in information search strategies, terms and concepts that they have not faced, should find what they want easily. Otherwise they are forced to think and feel annoyed and discouraged. The service defies a principle of usability if it makes the users think on how to find the information they need or how to interpret it, when it could be avoided (Krug, 2014). It is as much disadvantageous for universities as bothersome for users. A web page should be self-explanatory because as a rule people don't like to be puzzled; much of their web use is motivated by the desire to save time.

Previous research eventuates that user-based usability evaluation methods have been used to enhance the usability of university websites. Usability testing and questionnaires were the most used user-based methods. Research was carried out generally with manual processes and included both qualitative and quantitative data analysis. The number of studies on evaluating university websites on a developmental stage is still small. Nonetheless, so far plenty of them have been conducted to reveal some noteworthy issues and omissions about current versions of university websites. Most frequently mentioned usability problems were content quality, navigation and UI design. They are enough to witness the general status of stakeholders' dissatisfaction with university websites. Many of the studies just claimed that there are usability problems without providing solutions for the reported issues, which can naturally cause a doubt whether the authors have a strategy and a clear comprehension on how to solve them. Nonetheless,

so far plenty of studies have been conducted to reveal some noteworthy issues and omissions about current versions of university websites. (Yerlikaya and Durdu, 2017)

A lot of research studies all over the world applied different methods to succeed in roughly the same purpose—to evaluate the usability of a university website or several websites. Caglar and Mentis (2012) revealed user dissatisfaction about the website of European University of Lefke in Northern Cyprus when measuring user experience with the Website Analysis and Measurement Inventory (WAMMI) questionnaire. Mentis and Turan (2012) measured the usability of the Namık Kemal University website with the same method by asking participants to compare their expectations against what they actually find on the website. Adepoju and Osofisan (2008) compared websites of three universities: Federal Universities of Technology Yola, Akure and Owerri with website performance test. Papadopoulos and Xenos (2008) discovered a lot of usability problems on a website of the Hellenic Open University using heuristic evaluation and performance measurement. Some neglected points in different aspects of the design, interface and performances of 20 Bangladeshi universities websites were discovered (Islam and Tsuji, 2011) with questionnaire method and 2 automated online tools. To evaluate the website of Industrial Engineering Department of Bogazici University, Ekşioğlu et al. (2011) used expert evaluation methods, remote usability testing and post-test questionnaire.

In my literature review, I found also a case when persona profiles were used in a study for teachers and staff involved with the distant learning program. Lilley et al. (2012) carried out a research at the University of Hertfordshire to develop a set of 5 personas with the help of online surveys and interviews. First, they gathered demographic and affective data about the online distance learning population at the University of Hertfordshire with an online survey. Then there were interviews with students from the United Kingdom, Trinidad and Tobago, Saudi Arabia and Nigeria. It dealt with their reasons and motivation for studying online, as well as their expectations and frustrations about learning. When the personas were ready, they gained ambiguous feedbacks from academic staff members. Particularly, they challenged teaching workloads; e.g. one colleague claimed that their workload is heavy enough as it is and it might be intricate to introduce the personas into their practice. Some colleagues' reaction was pretty skeptical as they stated that they did not learn anything new from the persona descriptions about their students. However, there were colleagues who reacted very positively and announced that the set of persona profiles enabled their greater exposure about the students which they did not have before; moreover, they indeed wanted to refine their teaching practices taking into consideration their new findings.

Also, I found online personas that have been used to design and evaluate usability of university websites. Table 3 describes the examples of few universities that are using personas in their websites design.

Table 3. Personas used for university websites

University of St Andrews (2018), UK	<p>They made personas for 5 types of users, applying Jared Spool's success criteria (Spool, 2011). In persona development user stories and persona-weighted feature optimization matrix were used. Thus, the descriptions include background information, technical competence, communication, goals and bullet chart of information required.</p> <p>Personas developed are:</p> <ul style="list-style-type: none"> <li>• 7 prospective undergraduate student user personas (Scottish student, student from rest of UK, international student, non-native English speaker, direct entrant to 2nd year, incoming year abroad student, student with disabilities).</li> <li>• Prospective postgraduate taught student user persona.</li> <li>• 3 prospective postgraduate research student personas (EU student, international student, non-native English speaker).</li> <li>• External academic user persona (Professor at the University of Toulouse).</li> <li>• General public user persona (a mother of a St Andrews student).</li> </ul>
Penn State College of Agricultural Sciences (2018), US	<p>3 sample personas representing undergraduate students were developed, distinguishing key attributes, tasks and scenario of which of them.</p> <p>Personas developed are:</p> <ul style="list-style-type: none"> <li>• A traditional student with an Agricultural background user persona.</li> <li>• A DUS student who is a potential candidate for an Agricultural Science major user persona.</li> <li>• A non-traditional student without an Agricultural background user persona.</li> </ul>
University College London (2018), UK	<p>9 personas were developed covering the main University College London website user groups, including academic staff member, professional staff member, research funder etc.</p> <ul style="list-style-type: none"> <li>• Current undergraduate student user persona.</li> <li>• Prospective undergraduate student user persona.</li> <li>• Current postgraduate student user persona.</li> <li>• Prospective postgraduate student user persona.</li> <li>• UCL audience group student user persona.</li> <li>• Academic staff member user persona.</li> <li>• Professional staff member user persona.</li> <li>• Research funder user persona.</li> <li>• Current PhD student user persona.</li> <li>• Alumnus user persona.</li> </ul>
University of Louisiana at Lafayette (2018), US	<p>The personas were split into 6 types, descriptions also include key attributes and computer information.</p> <ul style="list-style-type: none"> <li>• Prospective student personas (3 local, international and military).</li> <li>• 2 parent user personas.</li> <li>• 2 current student user personas (current student and current graduate student).</li> <li>• 3 faculty personas (department chair, archeology professor, assistant professor).</li> <li>• 2 alumni personas.</li> <li>• Media persona.</li> </ul>

The table shows that the approaches to design personas vary from one university website to another. Almost all of them saw fit to have not only prospective students, but other user groups reflected in persona descriptions. The website of University of St Andrews has as many as 13 personas and tries to embrace all possible end users. The websites



neither report the outcomes of applying this method nor explain what the personas goals were and who were supposed to use them. It is also not known how the material for these personas were collected. However, they shed light on what kind of stakeholders the university websites have and can function as a source of inspiration for researches on similar topics.

### **3. Methods**

In this chapter I am going to introduce the study background and my motivation to conduct it, as well as the overall approach I chose to answer how to create multicultural student personas. This will concern what data was collected and how, what the limitations of the data and methods are and why such methods were chosen. It also includes how the persona method can be useful for experts engaged at work on the intercultural university website and how the means chosen fit the research design.

#### **3.1. Background, Motivation and Research Questions**

University of Tampere, Tampere University of Technology and Tampere University of Applied Science are going to merge into Tampere3 by the end of 2018. The website of Tampere3 is the one I wanted to direct my efforts to in order to explore the validity of the persona method in the cross-cultural context.

In essence, the goal of this thesis is to study the viability of personas as a way to reflect various international and Finnish students' needs, goals and behaviours in user-centered design of university websites through a case study of Tampere3 website. It includes consideration of how helpful the method could be for the website developers.

Also, I want to contribute to the discussion on multicultural personas and if they need to be separately taken into account when designing the international university website.

The goal of my study is to function as a connecting link between the team of the website developers and people who are interested in entering the university. Although these two parties do not communicate directly, the communication is carried out by yet-to-be students utilizing the website made by the developers. However, it will happen once the website has already been launched, and before the launch student personas can be one of the tools to maintain communication. Potential applicants and their interests and needs triggered the inception of the research idea since I was one of them not so long ago.

#### **3.2. Outline of the Research Process**

In the furtherance of the goal stated above, I have examined the literature and obtained sufficient knowledge about the persona method in order to create the profiles for the Tampere3 website. After conducting literature review, I carried out five main steps to answer the research questions, as depicted in Figure 1.

## RESEARCH TIMELINE

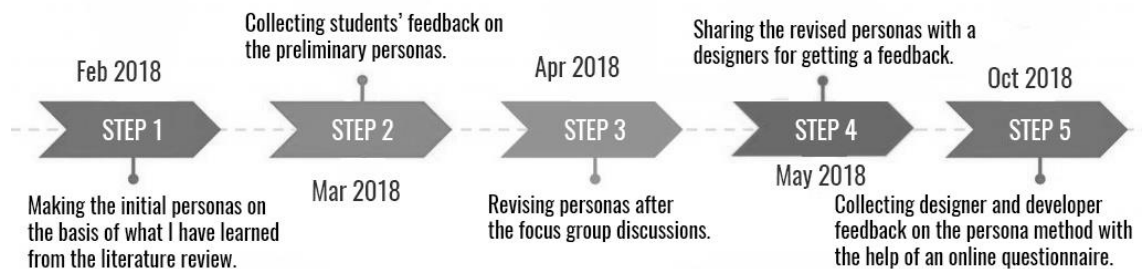


Figure 1. Research timeline

To clarify the process every step is explained next.

- Step 1. Making the initial personas on the basis of what I have learned from the literature review.

I found out that the persona creation process can start differently. Some practitioners begin with interviewing (or using other relevant user research method) various groups of users and cluster the empirical data according to the revealed similarities. Meanwhile, there is an alternative means to initiate the process, i.e. creating hypothetical user personas as an assisting tool to conduct the user research. Both approaches are described in detail in Section 2.3. Bedia (2018) emphasized that it is better to challenge the research objective through hypothesis validation instead of capturing broad arguments that can be interpreted in any way to force confirmation of any subjective assumption. In other words, it is a researcher's duty to understand Why before asking Why.

I decided to adopt the approach with the hypothetical personas. Nonetheless, my hypothetical assumptions should not influence the opinions of the users whom I was going to involve into the research. The initial personas were not designed for end users, i.e. Tampere3 web developers, content developers, designers and others, but for my mapping out and putting the raw materials into usable shape. I kept in mind that preliminary personas might be to one extent or another different from the final outcome because they were my conjectures and students themselves did not directly take part into their creation. It meant that I had to take care of excluding this risk and invest much more efforts to keep the research unbiased.

- Step 2. Collecting students' feedback on the preliminary personas.

The hypothetical persona profiles had to be validated through the feedback of the real website users. There are few groups of users whom the Tampere3 website is developed for, but since the students are the primary group the research emphasis is put mainly on them. Consequently the main source of data I explicitly availed myself of was the

opinions of students of University of Tampere, Tampere University of Technology and Tampere University of Applied Science. I had to choose a way to make the personas pass evaluation through the website target audience's feedback.

There are plenty of techniques in qualitative methodology, such as massively practiced participant observation and individual interview. Focus group discussion is a method that features benefits of both these techniques while it also makes for an autonomous qualitative method upholding its own distinctiveness (Colucci, 2007). It was chosen since it has been recognized as a valuable way to gather qualitative data and trigger the meaningful communication (Delli Carpini and Williams, 1994). Moreover, various researchers have justified the value of this method in exploring group norms and values, making focus group discussions an inestimable tool for cultural and cross-cultural studies (Colucci, 2008).

There were two focus group discussions with 4 students in each group. The questions I brought up for discussion were semi-structured to encourage two-way communication and get not just answers, but the reasons for the answers. The selection criteria of the students I invited were: 1) that they originally belonged to different cultures, so that in one focus group I could get feedbacks from local students and international ones 2) that they had different academic status, i.e. master's degree students mixed with bachelor's, PhD etc. 3) that they are of different age and gender so that discussions could be of a balanced nature.

The focus group discussions were audio recorded and transcribed correspondingly. All of them were held in English. More details about their arrangements are presented in Section 3.3.

➤ Step 3. Revising personas after the focus group discussions.

After step 2 I had to do an iteration of refining on the initial persona profiles, i.e. identify the patterns that represented the most important aspects of the data I gathered with the focus group discussions. There is no single right way to perform qualitative data analysis, so the method I chose was explained by the context of my study. I applied a thematic analysis for semi-structured interviews (Mortensen, 2018) because its flexibility tolerates an explorative nature of the study, where I could not be sure from the beginning of what patterns I was searching for.

The analysis made for the following milestones: acquainting myself with the data, tagging it with rough codes in order to report the content, search for repetitive patterns in the codes all over the different discussions, reviewing patterns, defining and mapping them and finally refining the personas with the new findings interpretation. First, I transcribed the recordings and start to take notes to make sense of all the data. Then I described the pieces of discussions with codes to organize the data into meaningful groups. Since I was assigning codes digitally I just copy and paste extracts with the same code to collate them. Then I started to interpret the fragments to find a set of coherent

and distinctive themes. When they were distinguished, I used the Xtensio online tool and reorganized the structure and layout of the information about the personas to make it more readable.

It is significant to note that a permanent moving back and forward between the entire data set was a part of the process.

- Step 4. Sharing the revised personas with designers for getting feedback.

After the persona descriptions were updated I arranged an individual interview with a web service designer working on the Tampere3 website. The purpose of the meeting was basically to suggest my work as one of the tools that the team could use while working on the website. Also, the interview was needed to learn about current state of work on the website and other details from within, since it was the very first time I had a chance to talk to a person working on it. These particularities could be meaningful and I will return to these aspects of the methods in the Discussion: the moment when I was able to deliver the persona descriptions to a member of the design and development team was not the beginning of the team's work.

- Step 5. Collecting designer and developer feedback on the persona method with the help of an online questionnaire.

I created a questionnaire of 11 questions to have a deeper understanding of developers' attitude towards the method. The questions were forwarded to the Tampere3 team to learn about their experience (or lack of experience) of working with personas. Initially focus groups were planned for collecting feedback, but then I had to choose the questionnaire method as an alternative step instead of focus groups because it is less time-consuming and Tampere3 members could not afford extra time for offline meetings. The questionnaire was circulated among all team members who were directly engaged into the website design and development as well as researchers who had taken part in the discussions and who were consulted with during the process.

### **3.3. Focus Group Arrangements**

When designing the questions to discuss in the focus groups, I tried to make them open-ended and unbiased. The topic of culture and nationality can be sensitive so the questions had to be answer-neutral not to make any of the discussers vulnerable. I did not intend to provide any options to answer since there are no correct answers and opinions. At the same time, the questions had to be thought-provoking and insightful for the discussions to make sense and be worth participants' time.

After a while I finally came up with eight questions, four about persona descriptions, three about the UTA website and one general question to facilitate further assessment of the results. The questions were made in such an order so that first the focus group formed an opinion about personas and discussed it. I expected it to contribute to follow-up with participants imagining what kind of cultural markers can take place on the webpage.

The questions were:

1. Have a look at persona descriptions. Do you find the personas believable? Why?
2. Do you think national attributes matter for designing a website for Tuomas, Léa, Fang and Amir? Please comment on your opinion.
3. How can the attitude to studies/ teachers/ team work of people of your nationality be different in comparison with people of other background?
4. What national features have you noticed in people of other nationalities which can be important to take into consideration in this case?
5. Check out the UTA main page and few random pages of the websites. What image of the university do the pictures, colors, icons and other graphical elements create? Do you think the impressions can differ depending on the cultural background of the website user?
6. Do you think the university website should be Finnish-oriented so all international students can feel more assimilated? Why?
7. What cultural elements would you like to see in the website?
8. On a scale from 1 to 10, how much do you share your national patterns of values, acts and thoughts?

Two focus group discussions were conducted with four people in each. Overall, there were four female and four male participants from different universities: University of Tampere (UTA), Tampere University of Technology (TUT) and Tampere University of Applied Sciences (TAMK). Having representatives from three universities was of particular benefit to the research since the upcoming website is meant to be for all Tampere universities students' use. They were of different academic degrees and different fields of studies. The details about the participants are shown in Table 4.

Table 4. Summary of focus group participants

Focus Group	SNº	Age	Gender	Academic status	Nationality
1	S1	20	F	Bachelor's exchange student in Civil Engineering (TAMK)	Finnish-German
1	S2	23	M	Bachelor's exchange student in Mechanical engineering (TUT)	Chinese
1	S3	40	M	Bachelor's student in Computer Sciences (UTA)	Finnish
1	S4	23	M	Master's student in Computer Sciences (TUT)	Finnish
2	S5	22	F	Master's exchange student in Linguistics (UTA)	Russian
2	S6	27	F	Exchange doctoral student in Politics (UTA)	Russian
2	S7	24	F	Master's student in Human-Technology Interaction (UTA)	Chinese
2	S8	42	M	Visiting scholar in Education (UTA)	Chinese

Both focus group activities were arranged in one of the UTA rooms. The discussions were recorded with participants' permissions. Before the actual discussion started, I

introduced the participants to the topic of my research and explained briefly the persona method.

First, all participants were given handouts and time to familiarize themselves with descriptions of Tuomas, Léa, Fang and Amir. The descriptions deliberately lacked the paragraphs about their nationalities, national attributes and international considerations. In Appendix 1 these parts are highlighted black.

After familiarizing themselves with the personas apart from their nationalities and cultures, the focus group participants were given sticky notes with missing paragraphs and they looked through the complemented profiles. In this way the personas' cultural backgrounds were emphasized by letting the participants investigate them detachedly.

Following that I suggested that we discuss the questions from the first block one by one. After the first block was over, we moved to the second one about the UTA website. The website was shown on a floor-to-ceiling multimedia projector and few of its pages were carefully analysed.

I tried to keep the flow of discussion smooth based on what the subjects were saying and did not stick to agenda. I encouraged follow-up and side-track conversations and they turned out to be as valuable as the canvas I had planned beforehand. As a result, both the questions I wanted to touch upon and some unexpected ones were discussed. However, I had to bear in mind to avoid getting involved with the focus group discussions and especially forcing my opinions on participants. My role was to follow the discussion as an outside observer and stimulate subjects speaking their minds freely. Occasionally I directed my attention to more reflective individuals who seemed to be less comfortable with instant vocalization of their mind and needed more time for reflecting. Nevertheless, there was no sign of focus groups confronting any issues with expressing themselves. The same can be said about the overall activity dynamics. The participants spent equally time speaking and they commented each other's words. I attributed this finding to the fact that all subjects were students and the topic of the discussion had direct relevance to all of them, so they demonstrated genuine enthusiasm on it.

Each focus group took approximately 45-50 minutes. I proceeded with the research and listened to the recordings, picking and analysing most valid parts. When analysing the findings from the focus group discussions, I tried to keep in mind that participants belong to a group and all the outcomes, opinions and ideas that were brought up for discussion are benefits of the group. There is always a risk to misinterpret and mispresent them as a series of participants' contributions instead of products of the discussion (Colucci, 2007).

### **3.4. Arrangements for Collecting Developers' Feedback**

Once the persona profiles were updated, I emailed in April a press and information officer related to the Tampere3 project. I was told that there are several subteams working on the new Tampere Universities website (UTA, TUT & TAMK) in several roles. Each

subgroup had goals related to merging systems, applications, and technologies. All of them were having a very intensive phase on the development of the website since the launch was going to happen by the end of 2018. Initially I thought of having discussions group with representatives of some of the teams as I did with students. I was recommended to contact the content planning group for the upcoming Finnish & English Admissions website. It met the research goals particularly well because the admission page is the one both local and international applicants visit anyway. After sending the emails to the members with different areas of expertise I got one response from a web service designer and decided to arrange an individual interview. Having regards to the focus of my inquiry and the fact that we were limited in time I made the interview semi-structured. A loose guide was developed with general questions to open up conversation about the topic.

Roughly, the questions we discussed were:

- What is your role in Tampere3 website development?
- What is the current state of work on the website?
- Is it going to replace the UTA, TUT and TAMK websites or be an alternative? How will it be better?
- What are your top 3 frustrations with your current website? How do you involve the students or applicants into the development?
- Do you think the university website should be Finnish-oriented so that all foreign students can feel more assimilated?
- How the website is tested?
- I have conducted research with the participants of 2 focus student groups. Their academic status, age and nationality were different in order to find out what their needs are. Then based on the collected data I created persona descriptions. Do you find the personas believable?
- Do you think Tuomas, Léa, Fang and Amir national attributes are important for developers to know when designing a website for them?

The interview took place in the university library and lasted about one hour. My interviewee got the final personas to share them with her team.

In September I started arranging the final step of the data collection. Initially I considered conducting 3-4 focus groups with various Tampere3 team members so that every focus group has up to 5 participants. However, the process was too intense to synchronize the schedules of 3-5 people and set aside an hour for an offline meeting. The only way to get feedbacks was to choose an online method as less arduous as possible. Thuswise I created a questionnaire of 11 questions to learn about developers' attitudes, experience and alternative user-centered design methods they had carried out for Tampere3. When it comes to gathering quantitative data, questionnaires are one of the most affordable and flexible tools. It also allows respondents to maintain their anonymity.



To avoid getting answers chosen before fully reading the question, I made a questionnaire really short and questions simple to get the most accurate responses. As a tool, I chose to use Google forms because it can include all diverse types of questions I needed and store the feedback received so later on I can analyze it in detail.

The questions were designed to learn both what are the developers' personal priorities and attitudes and what were their command decisions in Tampere3 development. In such a manner, I would be able to see how individual concerns and opinions shape the full picture of team work. In general, the questions were supposed to shed light to user-driven design methods used during the Tampere3 website development, the results they produced and participants' estimation about their effectiveness. Besides, the team members were asked to make an assessment of the statements about the persona profiles I had developed. The questionnaire is split into 4 sections, the first and the last ones are for all respondents, the second one is for those who had used personas as a user-centered design method in the project, the third is for those who had not. The full questionnaire is available in Appendix 3.

It was shared with the potential respondents via email both directly and through the press and information officer. Six persons gave their answers.

## **4. Results**

In this chapter I describe my initial persona hypothesis, results from the focus groups and the resulting final persona descriptions. It also reports the findings from the interview and the questionnaire with the Tampere3 team members about the design and developmental processes. Additional discussion can be found in Chapter 5.

### **4.1. Initial Personas**

I followed the recommendations of creating personas described in Chapter 2, bearing in mind that the instructions there are generalized and context free. Thus, I needed to find an appropriate way to approach the students to achieve good-quality data.

Again, while creating the preliminary personas, I adopted some advice from Cooper et al. (2014) and included name, age, gender, location, details of the environment and daily routine, their ongoing academic status and three different types of goals: experience goals, end goals and life goals into the profile descriptions. Since the personas are users of the university website, I found it relevant to describe their computer skills, source of funding and study-related information, such as the study program they are aiming at.

As an example, see Figure 2. Tuomas being Finnish needs to pass the entry exams before entering the university, he is confident with using IT, so his needs on the Tampere3 website and the way he is going to use it are different from personas whose backgrounds are different.

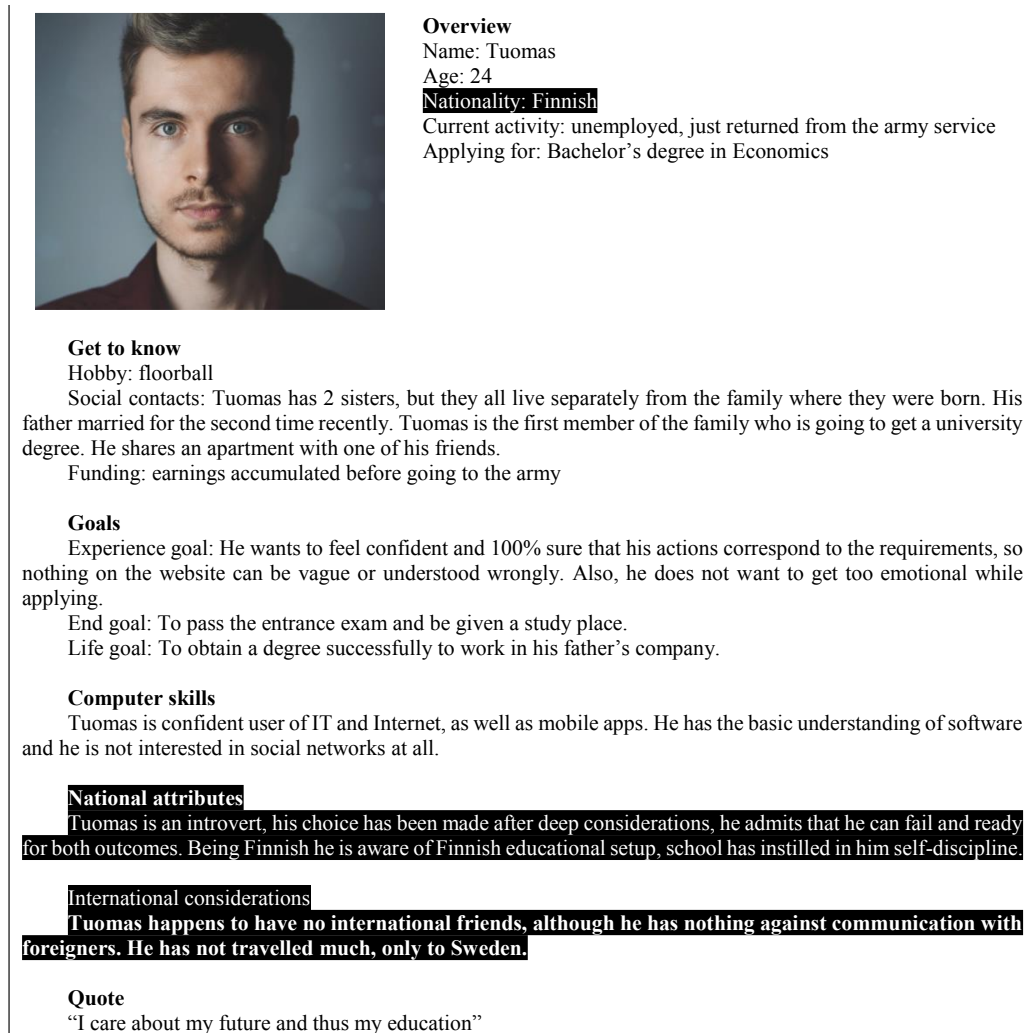


Figure 2. Example of the preliminary personas.

I wanted personas to represent the users who would most likely visit the UTA website, so they have different academic statuses: potential Bachelor's, Bachelor's exchange, Master's and PhD students.

It was decided to adhere to four personas since a larger number would not suggest anything brand new, fundamentally different from the others. Since four is an even number, I made half of the personas male and half female. The profiles included demographical, contextual and attitudinal data. Overall, personas were built to help one to capture the way the features of particular users (archetypes) influences their manner of using a website.

One feature that was given accent to was the cultural markers of the personas. The university website is aimed at both local and international users. Any non-local user needs to be capable of navigating through an online platform as effortlessly and effectively as Finns do. Personas were intended to serve as an instrument to facilitate developers in taking multicultural audience into consideration and respecting their differences.

Enabling personas with this power strongly suggests that it is of utmost importance to know to what extent the users' cultural backgrounds may affect their experience.

I made each preliminary persona be of different origin: one local, one from Western Europe, one from East Asia and one from Western Asia. Moreover, the profiles were complemented with pictures and quotes (see Appendix 1). Their names are Tuomas, Léa, Fang, Amir. The descriptions had the following parts about students' nationalities, national attributes and international considerations.

Tuomas' nationality is Finnish, he is an introvert, his choice has been made after deep considerations, he admits that he can fail and he needs to be ready for both outcomes. Being Finnish Tuomas is aware of Finnish educational setup, school has instilled in him self-discipline. Tuomas happens to have no international friends, although he has nothing against communication with foreigners. He has not travelled much, only to Sweden.

Léa is French. Her decision to apply for exchange studies in Finland was taken spontaneously and in case of failure Léa would not get upset, however, she does not think of it. In her home university she gets used to teachers' control, frequent reminders etc. She has been to many places with rich historical and cultural heritage and expect similar from Finland. She is frustrated about endless French bureaucracy and sea of paperwork but used to it. Léa does not doubt that she would get along with Finnish people and make friends with them easily. Léa has many international friends, she enjoys both online and offline chatting with them, they visit each other and do trips together. She worked as a baby-sitter in Slovenia for one summer and participated in global volunteer movement. However, it is her first time in Scandinavia.

Fang is Chinese. She used to respect her teachers and listen to them. Student-teacher relationship is not peer-to-peer. Fang does not want to go completely out of comfort zone, since relocation itself is a major shift in life. She is interested in abroad experience so she is surfing the Internet for various international scholarships, internships, volunteering and other options, but her main ambition is to pursue a full degree. She has not been to Finland or any other northern Europe countries. Fang is focused on meeting other Chinese people there rather than making friends with local ones.

Amir is Iranian. He is quite intolerant to phenomena and ideas which are contrary to the ones he is used to experience in his native environment. In his university education students have less freedom and a more demanding system. He has not much experience in international matters. He is a family man and not really interested in finding local or foreign company. He is interested in finding employment in Finland after getting his doctorate.

#### **4.2. Students' Views on the Initial Persona Profiles**

Focus groups with students brought a lot of findings about their preferences and expectations on the website design and attitudes about the personas.

### **Language and content**

Overall, students concluded that it is not possible to adjust a website to all cultures so the most important goal is to make it understandable and convenient for people of any background. Language was named as the most important factor in making the university website appealing to international users.

Participants found it annoying that the content and structure of the English and Finnish pages were different, which is not uncommon. Furthermore, there are cases when the information in multilingual websites is contradictory which is totally confusing. When the second group was reflecting on changing some parts of the website content, the participants rejected this idea because “people might feel that they are special treated in a negative way”.

### **Finnish experience**

As for other cultural markers beside language, the main finding was that international students respond favourably to user experience they get while exploring a university website different from the ones they are used to in their native countries. The quotes by S2, S5, S6 and S7 prove that they enjoy having an authentic “Finnish” feeling when they visit the UTA website.

“I don’t mind using Western website, because it was my own intention to get it, otherwise I would go to some Asian website.” (S2)

“I like the interesting news and pictures of the university and Finland on the website.” (S5)

“I don’t think website needs to be designed because international students would rather have similar environment compared to their home schools.” (S6)

“If they [international students] really want to join an international university, they need to be prepared to have a different environment. Not only students picking universities, universities also need to choose the students who are interested in such international university.” (S7)

Moreover, international students found making a website Finnish-oriented fair because they have classmates from everywhere, but the majority are Finns.

### **Colours and pictures**

Participants distinguished some of the Finnish markers on the UTA webpage, including the following: plenty of pictures; many pictures of gloomy faces, using red as a symbol of something danger or evil. S7 noted:

“Red in Asia means positive things, like passion, joy, happiness. So when I see the news in red background, I thought the news is something worth celebrating, but instead, it reads: Refugees’ voices are not heard.”

Some of the students liked the abundance of pictures, yet they did not arrive at a common view on this matter, as there were some who thought “it’s confusing and doesn’t create a serious impression, more like a kindergarten website”.

“The home page is overloaded with information in my opinion and not structured well.” (S1)

Besides, a female participant (S1) from a western country instantly paid attention to the lack of women’s pictures on the homepage.

S6 notices: “When I see some pictures on the website, I don’t believe in them, for example, the pictures from summer school look like staged photography, not real students.”

S7 and S8 agreed that “sometimes happy and smiling pictures make it obvious that the university wants to sell itself”.

### **Persona profiles**

The persona descriptions were found quite believable and there were many suggestions on how they can be used to demonstrate students’ needs. S4 suggested:

“It can be shown through personas that the distance between teachers and students in Finland is less than in other countries”.

“Personas are useful to make developers aware of people who are not keen on changing after moving to Finland.” (S2)

“I think mentioning cultural attributes in personas is important because developers don’t take into account that people expect the same experience when go abroad.” (S5)

It is worth noting that in both focus group discussions the students did not appreciate the way I had labelled the national and cultural paragraphs in Tuomas, Léa, Fang and Amir profiles. Although the content of the paragraphs can “help to understand each person a bit better”, the participants emphasized that it has scarcely anything to do with their nationalities.

“I share some of the personas’ motivation, but it is not about my nationality, but about my personal identity.” (S2)

Participants also concluded that the way they feel about the website can be different from the way people of different background do, not because of their culture, but because they are less or more tech savvy and experienced in the web.

### **Suggestions on the website**

There were also suggestions on what students want to see on the Tampere3 website:

“I would like to see if each country has a student union, this information can appear in the website, so international students won’t feel alone or scared. They will have help from their own country’s people if they need.” (S5)

“I want to see exchange students’ stories about their experience on the website.” (S1)

“Maybe information about accommodation in Tampere could be useful, the housing problem is getting worse. I would appreciate if there’s a forum or link to it where students can find roommates and apartments.” (S3)

#### **4.3. Final Persona Profiles**

After the focus group discussions, I could use the findings to refine on the persona profiles. Overall all focus groups participants classified themselves as being represented by the existing personas, hence I concluded that I don’t have to create more. However, the iteration was needed because the users had more values to consider which had been unknown previously.

First, I used the Xtensio online tool and reorganized the structure and layout of the information to make it more readable. I changed some of the headings of the paragraphs as it was suggested by participants. I added more personality traits to each profile, i.e. scale chart with 2 opposite extremes: introvert-extrovert, thinking-feeling, sensing-intuition and judging-perceiving. It was made in order to add more human attitude and credibility into the descriptions. Personas with personality traits are proved to be a good substitute for access to actual users (Dupree et al., 2017). Data visualized this way is easier to perceive, being a convincing instrument at the same time. For the same reason the bar graphs of preferred perception channels were added, i.e. the channels students use to learn about universities. I found it important in university website case to show how often referral, traditional ads and social media channels make students consider Tampere universities as their educational options.

Each profile got 3-4 catchy tags with their characteristic that can shape an opinion about them as web users: Tuomas is responsible, diligent, purposeful and conservative; Léa is inquisitive, adventurous and easy-going; Fang is shrewd, go-getting and lively; Amir is non-flexible, mature, conservative and skillful.

The motivation of users is shown in bar charts with 4-5 most meaningful options depending on every particular case. In descending order Tuomas’ motivation are career prospects, growth, change in direction in life, public image and social one. In contrast Léa’s strongest motivation is social and entertainment, also she is motivated by putting a good point on her CV and personal growth. Fang, being a non-EU citizen is mostly driven by immigration horizons, then her public image, growth, social interest and fear of being unsuccessful. Amir is also motivated by immigration horizons, career prospects, life quality, power and fear of being unsuccessful.

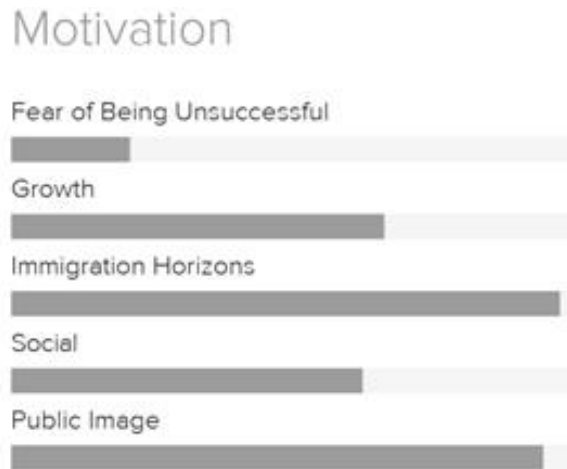


Figure 3. An example of how personas' motivations were presented

Also I devoted one part of the profiles to personas' frustrations to put as much accent to what users do not want to experience as to what they want to. Such a connection of users to context of use (and how context affects or determines use) allows Tuomas, Léa, Fang and Amir to represent a richer understanding of a given audience (St Amant, 2005). Tuomas' frustrations are to confront the need of asking for personal assistance online if something is not clear and multiple steps to finding necessary information. Léa's and Fang's profiles were supplemented with their frustrations to fail to get what is expected from the exchange program and complicated process while not being terribly tech savvy accordingly. Amir's profile reflects the frustration of all immigrants who plan to work in Finland after graduation so he does not want be misinformed about such vital things as employment market in Tampere and Finland.

The profiles also provided key insights on the attitudes individuals may have making use of the website. Thus, exploring the website, Léa needs something illustrative about Finland to have a clue what to expect. Amir wants to be able to learn from the English page absolutely the same information as if he knows Finnish. He is not used to gender equality because in his country males hold primary power. Fang wants to find on the website the information about communities of students from her native country. The descriptions can be found attached in Appendix 2.

I did not complement my personas with scenarios, but there could have been ones as Cooper et al. (2014) suggested. Scenarios could capture how Amir, Fang, Tuomas and Léa perform tasks on Tampere3 website based on their motivations, backgrounds and goals, and suggest possible ways to accomplish these objectives. For example, a scenario could outline how Léa uses a website to set up a studying schedule to get a permission for an exchange program.



#### 4.4. The Developers' Standpoint on Personas and User Centered Design

The very first finding I had was that a whole bunch of teams are working on the Tampere3 website:

- Tampere3 project team, including communications and IT/webmaster representatives from each university & Product Owner for the new website;
- developer team (Wunder Finland Oy), including delivery manager, main architect and service designer;
- content planning group for the Education/Admissions section of the website;
- project team for the Student's Guide section of the Tampere Universities website;
- project teams for the Student's Desktop and intranet services.

Hence, there were outside companies involved into the project.

The teams' standpoints I am going to describe were discovered with the help of the interview and the online questionnaire.

#### Results of the interview

I met a web service designer for an interview. In summary, we first talked about the interviewee's role in the project, current state of work under the website, how it had been tested by so far, what are the top frustrations about the existing UTA website, and how the students are involved into the design process. Then we discussed the persona profiles I created.

The project was about to be moved into production by the third-party company and ongoing changes and enhancements were intended to be completed by the individual universities and departments. All testing engaging students were mainly expected to be carried out at this stage. Although the team created a strategy and followed it, like almost in any project there were a lot of unexpected pitfalls and time pressure on some of the developmental phases. Integrating everything about multiple fully-featured websites in a cohesive way was more than challenging and the political and merge-related decisions that carved the path for the future of Tampere3 website were time-consuming. Sometimes testing was skipped just because the team needed to keep pace with the set deadlines, although they understood how important testing is.

I learnt that they actually had used a persona method, but there was only one persona description and not robust on top of it, so they did not actually benefit from it. This description lacked few important components of a fully-featured persona, such as a name, appearance and so on. However, it meant that overall the team of the interviewee had considered persona method among others to help them and my research questions resonated with the team's interests.

My interviewee's opinion about my work was favourable. E.g. she found it very common when people become exchange or degree students in Tampere universities

having a Finnish boyfriend or girlfriend as one of the reasons. The same happened in Fang's case.

I was also told that recently students' multicultural differences had not been noticed to mean a lot. They mattered to a significant degree formerly, especially when it was about technological context. Some years ago, communication designers needed to proceed from the fact that some technologies were not readily available to specific users or they used the website differently based on local conditions.

### **Results of the questionnaire**

The online questionnaire got 6 responses from Tampere3 project team (communications and IT/UTA, TAMK and TUT webmaster representatives & Product Owner) and TAUCHI researchers. As their most important concerns in website projects most respondents mention:

“Clean, appealing design, intuitive navigation”.

Some also referred to concerns which have little relevance to user and user-centered design:

“Getting the site up for publication in schedule, staying in budget”.

All of them were familiar with the persona method, either have developed or have seen them used in projects.

As for applying personas to Tampere3 project, the answer was that personas were developed but not used. Instead, usability testing, analytics review, heuristic evaluations and expert reviews were used. Nonetheless, using the persona method was not rejected deliberately. For them the problem was not that the team did not have any data that would have been needed in building personas or they did not know how to build them.

Half of the respondents did not think that they had reached a good understanding of the users and their needs in the project. None of them is sure that they consider multiple cultural backgrounds of Tampere3 website users when developing the website.

After having a look at the personas I had created the respondents decided they are neither abstract nor impersonal. They found them helpful to take into account multiple international backgrounds of the users. However, the personified details of personas could mislead or distract according to some of the respondents. All of the respondents agree that building user personas is useful from the beginning of website development.

They expressed their need to know more about users in their work on Tampere3 project. Some said personas could complement usability testing to get more information about users' background for interpreting the results better. Also, students' frequent questions and problems, various situations the applicants and students come from and prospective students' expectations about the university were named as details that could have been useful for the project.

“It would be useful to know why different users visit the website, what challenges they face and what they expect”.

“Students’ backgrounds to design a user flow with the user in mind”.

“The top tasks students want to accomplish in order to follow the path and check how they get there”.

To wrap up, the cooperation with the Tampere3 teams was not very tight. What I found out was that realities of the project did not have a lot of room for proper shared understandings of the user. The findings leave a lot of food for thought which is discussed in Chapter 5.

## 5. Discussion

Next I will discuss and interpret the significance of my findings in comparison with what was already known about the persona method in user-centered design of university websites. Also, I will discuss about the different approaches and valuation on multicultural design of university websites, as well as the limitations of my case study and how they might affect the results.

### 5.1. Multicultural Design of Finnish University Websites

Universities accepting foreign students need to have websites which support cultural diversity. However, the literature review showed that there are very few exploratory qualitative investigations with basic statistics related to university websites in light of their cross-cultural users. Their findings cannot fully cover the topic. Overall, there is a need for more research about cross-cultural web design with different variables. As an example, there is not enough data on what are the specific features required for designing for Asian users, despite them constituting a significant share of product and serving market (Nawaz and Clemmensen, 2013). In context of university website design, new findings on the topic are no less important because more than half of the world's exchange students come from Asian countries.

Being a very significant factor to take into consideration, cultural difference is still just one of the great number of attributes that can influence the interaction with the university website. People are different for reasons with no relevance to culture. Thus, sharing a given culture individuals vary in physical characteristics, gender, age, social class, religion, multicultural exposure, education level, linguistic ability and expertise with technology also have a role. “Some uneasiness with the system or user mistakes may, in fact, have nothing to do with cultural differences”. (Callahan, 2005)

Confronting such a large number of explanatory variables, it is important to put a phenomenon of culture into workable limits and still be aware of other attributes that may have impact on the results of culture and interface studies. What is especially challenging about it is that ethnic and cultural groups coexist across nations and cultural and ethnic differences take place within one nation (Nawaz, 2013). Race, culture or language are not the shared basis for nation-states sometimes. The approach to a culture should be more dynamic and go beyond nations since the culture is disprovable, contextual and spontaneous (Myers and Tan, 2003). Hence following cultural background is far more difficult than following ethnical identity of possible websites users.

According to Callahan (2005), there are some interface elements which are the most determinative for the interaction in terms of culture on both textual and graphical levels, i.e. interaction cannot otherwise be successful or is dramatically hampered. These elements are the language of the interface, which has to be familiar to user, the user's skills in using proper fonts and specifying formats needed (numbers, date, time, etc.).

Considering that the university offers study programs only in 2 languages, it is logical to assume that it does not need to have more than Finnish and English versions, since a student needs to know at least one of these languages anyway to be able to study. However, students noticed that there are differences between the English and Finnish versions sometimes. Callahan (2005) also claimed that users with greater insight to Western culture will conceivably have less pressure confronting cultural differences. In the university website case, the potential students consider Finland as a place for relocation, so it can be expected that they tolerate the Western culture enough to discover the website interface elements with Western connotation. This was confirmed in the Tampere3 case.

Almost 80% of enrollees to Finnish universities consider Finland to be a great place to live (Ferm, 2017): according to International Student Barometer, 78% of the respondents considered the chance to get employed in Finland. It reveals that students coming to Finland are ready to put efforts to assimilate and correspond with the Finnish environment.

From this perspective the situation is contradictory – on the one hand, most resources maintain the idea that the user experience should be as comfortable and familiar as possible (Fernandes, 1995), on the other hand Finnish university website users foretaste a chance to explore foreign country. In theory it is not bad when designers are ethnocentric and demonstrate Finnish values but they still need to translate visual components to the target language. Focus groups conducted with students from Tampere universities included the questions about Finnish cultural markers and how the foreign students feel about them. Overall, the discussions proved that interaction with a Finnish website was a part of the experience students deliberately aimed at gaining. However, there is a difference between keeping in mind that the foreign users are interested in Finnish experience and neglecting the fact that the website users are not only Finnish.

One of the focus group discussions brought up the subject of unnatural smiling faces on the UTA web pages about international or foreign exchange students. It justified the opinion that websites emphasizing the parts of studying abroad concerning cultural immersion and promising for revolutionary or “life-changing” experiences act like advertisements (Bishop, 2013). Some students mentioned that it is not only ridiculously incredible but also made them think they are treated in an insulting way. The review and findings stated above suggest that not making the interaction maximum homelike for the representatives of each and every culture but creating an image of the university arena which is equally appealing to potential consumers in both Finland and other countries is a goal which personas should further. Persona method was supposed to help in understanding the users’ needs and reflecting the details about their expectations.

When having a discussion on the university website I found out that there are students far from the topic who do not distinguish between the UTA website and other study-

related online platforms like Moodle or NettiOpsu. It means that their experiences and feelings about the website may be confused with experiences and feelings which are not really applicable to it. Even if each team's area of responsibility is limited to one website, one cannot ignore the fact that the overall impression of the university web services is influenced by the sum total of all websites students have to use in their studies. The students suggested to either merge these platforms or raise a question how to easily get information from different platforms by using one starting portal.

## **5.2. Student Personas in Tampere3 Design**

After all iterations, each of the persona descriptions I ended up with included the following demographical, contextual and attitudinal data:

- Name, age, gender
- Location
- Study-related information, such the program the person is aiming at
- The ongoing academic status or other current activity
- Personality traits (in my case there is a scale chart with 2 opposite extremes: introvert-extrovert, thinking-feeling, sensing-intuition and judging-perceiving)
- The bar graphs of preferred perception channels
- 3-4 catchy tags with the student's characteristics that can shape an opinion about him/her
- Bar charts with the 4-5 sources of motivation of the user
- Persona's frustrations
- Key insights on the attitudes the individual may have making use of the website
- Experience goal, end goal and life goal
- Computer skills
- Details of the environment and daily routine
- Source of funding
- Cultural background
- Picture and quote

The students participating in the focus groups found themselves belonging to the archetypes the personas stand for. They did not find their nationalities relevant to their user experience, so in the future persona practitioners should be careful with these labels and better operate the term "culture", which is more compromising and profound.

After students' feedback I found evidence once again that creating too many personas is wrong as opposed to few university websites mentioned in Section 2.9 which have up to 13 personas. It contradicts the idea of identifying the essentials in the primary user groups and trying not to satisfy every possible user. According to my findings, four user personas were enough to cover the main differences which can influence the way various

students use the website: their main motivations, goals, backgrounds, attitude to studies and so on. While Section 5.1. discusses the complexity of the culture conception in detail, the personas can also disabuse the stereotypes about different students' study cultures. However, it is more meaningful for teachers to behave culturally responsive in the classroom rather than for the website development team.

Conceivably, in projects of as large-scale as Tampere3 with several teams involved, teamwork and interactions are quite complicated. Putting personas to use is not that easy even in the context of smooth-running and well-organized channels of communications within the team. Notably, in most cases the efforts are sufficient when creating them but when it comes to applying them in design, the motivation to adhere to the method decreases dramatically. Upon that, usability testing was skipped at a few stages of Tampere3 website development in favor of meeting deadlines and staying in budget, and according to the developers' opinions, the design methods which were adapted did not bring enough understanding of users' needs.

Presumably, applying personas could change the process of designing rather than the final user interface which emerges as the result. We cannot be sure at this point whether these changes could be for the better or for the worst: the survey showed that the developers acknowledged that personas could have been helpful and that there is still information about the students they wanted to know. The process which took place according to the people involved in it cannot be named smooth and seamless and the pace was frantic. The way the team tried to bring personas into use was not rare in web projects and was a risky case of "elastic" or "shadow" personas (Guðjónsdóttir, 2010). The persona was not only being vague and unfinished in general, it did not have a name which was enough already to likely fail to make use of it. Apparently, it was not a priority and was left aside, since there were other concerns that the team had to put first.

There are few speculations about why the personas were not approached more enthusiastically. Since the project was huge, all team members cannot participate in creating them. When all experts are engaged, they are more likely to discover the background material and truly believe that the personas are proper stand-ins for their users (Blomquist and Arvola, 2002). Overall, the success of persona method depends a lot on the level of developers' involvement, which can be advanced if there is a cooperation with real users (Johansson and Messeter, 2005). A lot of factors indirectly point to the fact that in a huge project with many teams it is more complicated to make use of personas.

### **5.3. Analysis of the Methods**

The choice of methods can influence the results of the research deeply. I chose to conduct focus groups to collect information about students in Tampere universities. I found this method very effective and the findings I had helped me a lot in updating persona profiles. However, I have to mention few variables that could affect the results. First, the focus

groups were arranged in English, which was none of the participants' native language and some of them were not very confident about their English skills. This could stop a participant from expressing his or her opinion on the topic or be the reason of minor misunderstandings throughout the discussion.

Second, the composition of the groups was not perfectly balanced because the second group had only UTA students and did not have any Finnish students. Yet, talking about the participants backgrounds, it was a good thing I was able to find students from all stages of education and two of them had a UX background, which meant a lot for the discussion flow.

Thirdly, one of the main points was to involve people of various cultural backgrounds. It cannot be ignored that the earlier studies showed that participants of different cultural backgrounds tend to behave differently during focus groups or interviews. They might provide feedback and react to various instruments of acquiring information from them differently. The intended interpretation of an answer can differ a lot from the one along cultural lines (Getto and St. Amant, 2014).

The method with sticky notes was a good solution. It helped students to feel the difference and estimate the personas' cultural backgrounds by contrast with a clear view.

After having the personas ready, my main challenge was lack of collaboration with the website developer teams. Initially my research goals were more ambitious and I could have gathered more information for analysis and drawing conclusions if I had reached more experts to get feedback. I aimed at closer collaboration with the Tampere3 teams to see more of the website development from the inner side. Since the results of the final questionnaire have shown that there are developers who think of the method favorably, the persona profiles could perhaps have brought more value to the developmental project. Now, my outcomes from this cooperation are pretty limited and I cannot report anything about applying the personas I created to the actual process.

One of the things which I learnt from the literature review (e.g., Nielsen and Storgaard Hansen, 2014) and then found evidence in my study case and can thus claim safely is that personas have to be developed and applied from the very beginning of the project. It is the answer I got from all respondents of the questionnaire. It explains the fact how hard it was to introduce and promote the persona method in the midst of the process. Not only it loses part of its worth but also people engaged into the development cycle become less and less flexible. In my turn, I could not contribute from the very beginning because the Tampere3 project had originated much earlier than I entered the university.

The questionnaire was a last choice, which I would not have given the preference over other methods if there had been alternatives. With any online questionnaire, accurate targeting is necessary if a researcher wants to receive the most exact results. In my case, circulating the questionnaire was made almost at random because I could not reach



Tampere3 team members directly. I did not know to what extent people who answered were engaged into designing and whose opinions were the most valuable. At the same time, I had to be extremely careful with choosing questions to ask to keep the questionnaire manageable in 10-15 minutes. The number of respondents could also have been bigger to have more accurate statistics and probably more data for analysis. Only those who knew about the persona method chose to answer. It leaves open the level of knowledge and appreciation of user-centered design methods in general in the teams. Perhaps this is one explanation why my attempts at arranging focus groups with them were in vain. However, the online survey brought rather truthful results. since a researcher being present can introduce the risk of less sincere and more social desirable answers.

## 6. Conclusion

There is no decisive answer to what verbal, visual, and interactive messages the university websites should contain to yield favorable user experience for both local and international students. Focus groups with Tampere universities' students introduced some clarity to the way they expect to use Tampere3 website. Since the emphasis of the study was given to having multicultural users in mind, one of the main findings was that foreign students respond favourably to user experience they get while exploring a university website different from the ones they are used to in their native countries. Prospective students consider Finland as a place for relocation, so they tolerate its culture enough to discover the website interface with Finnish markers and anticipate the authentic "Finnish feeling".

Also, students did not find their needs and peculiar features relevant to their nationalities but attribute them to their personalities. One way or another, the details I included into persona descriptions made the students feel belonging to the archetypes the personas stand for. Persona method was expected to show foreign users' interest in Finnish experience, as well as local and international students' backgrounds and needs. This way, Tampere3 website can demonstrate its intercultural competence.

There are very few studies about personas of university websites and I found only some publicly available examples of student personas designed for universities in the UK and US. Instead, there are a lot of papers reporting how personas were misused in different commercial and non-commercial projects if the approach to them was not with full vigor and dedication. It is one of the methods which should pervade the developing process from the beginning till the very end. Tampere3 website is a very ambitious and extensive project which includes scores of people. After the case study I conducted as an outside researcher, the question asks itself whether the persona method is at all reasonable in projects of such scale.

Although the team considered the method at the beginning and put some effort into creating personas, these intentions came to nothing to the advantage of other usability methods. Personas were not rejected deliberately, but the motivation to use them was not enough to adhere to the method throughout the project. Apparently, personas turned out to be more time and effort consuming to maintain as much as they were not leant toward among dozens of methods. However, it does not disprove their effectiveness when they are applied properly. The lack of motivation to use the method took place because focusing on the users was not the main priority the team had. Thus, the methods the team chose corresponded to their possibilities to invest into the user experience.

The team had its reasons not to put personas above other methods. Still the findings show that usability testing, analytics review, heuristic evaluations and expert reviews did not make them feel they have a good understanding of the users' needs. Moreover, some of the team members purposely did not aim at gaining this understanding.

There is still user-centered design and development work ongoing at the time of writing these conclusions. The future studies can examine how Tampere3 will be updated after launching and totally replacing the current websites. While now personas were not given a chance to contribute to the results, using them can change both the outcome and the process in the project. Some time later it can be investigated what concerns will be given to user-centered design and if the same methods are going to be used.

## References

- Adepoju, S. A., and Osofisan, A.O. (2008). Websites usability: a comparison of three university websites. *Journal of Science Mathematics and Science Education, (JOSMED)*, 1(1), 114-122.
- Altbach, P.G., Reisberg, L. and Rumbley, L.E. (2009). Trends in Global Higher Education: Tracking an Academic Revolution. Executive Summary. A Report Prepared for the UNESCO 2009 World Conference on Higher Education. Available at [http://www.cep.edu.rs/public/Altbach\\_Reisberg\\_Rumbley\\_Tracking\\_an\\_Academic\\_Revolution\\_UNESCO\\_2009.pdf](http://www.cep.edu.rs/public/Altbach_Reisberg_Rumbley_Tracking_an_Academic_Revolution_UNESCO_2009.pdf). Link retrieved March 19, 2018.
- Apperson, G. (2015). How university websites portray study abroad. *Elon Journal of Undergraduate Research in Communications*, 6(2), 5-15.
- Baty, S. (2009). User research for personas and other audience models. UXmatters. Available at <https://www.uxmatters.com/mt/archives/2009/04/user-research-for-personas-and-other-audience-models.php>. Link retrieved June 4, 2018.
- Bedia, O. (2018). How to know your users' real needs? A framework to understand the why in user interviews. UX Collective. Available at <https://uxdesign.cc/how-to-know-your-users-needs-2d24fb92a01e>. Link retrieved March 18, 2018.
- Beyer, H. and Holtzblatt, K. (1998). *Contextual Design: Defining Customer-Centered Systems*. 1st edition. Morgan & Claypool Publishers.
- Bishop, S. C. (2013). The rhetoric of study abroad: perpetuating expectations and results through technological enframings. *Journal of Studies in International Education*, 17(4), 398-413. doi:10.1177/1028315312472983.
- Blomquist, Å., and Arvola, M. (2002). Personas in action: ethnography in an interaction design team. In *Proceedings of NordiCHI'02*, 19-23. doi:10.1145/572020.572044.
- Bogers, T. and Wernersen, R. (2014). How “social” are social news sites? Exploring the motivations for using Reddit.com. In *iConference 2014 Proceedings*, 329–344. doi:10.9776/14108.
- Cabrero, D. G., Winschiers-Theophilus, H., Abdelnour-Nocera, J. and Kapuire, G. K. (2016). A hermeneutic inquiry into user-created personas in different Namibian locales. In *Proceedings of the 14<sup>th</sup> Participatory Design Conference*, 101-110. doi:10.1145/2940299.2940310.
- Caglar, E. and Menten S. A. (2012). The usability of university websites – a study on European University of Lefke. *International Journal of Business Information Systems*. doi:10.1504/IJBIS.2012.048340.
- Callahan, E. (2005). Interface design and culture. *Annual Review of Information Science and Technology*, 39(1), 255-310. doi:10.1002/aris.
- Chapman, C.N., and Milham, R.P. (2006). The persona's new clothes: methodological and practical arguments against a popular method. In *Proceedings of the Human*

- Factors and Ergonomics Society 50th Annual Meeting, 50(5), 634-636. doi:10.1177/154193120605000503.
- Chapman, C.N., Love, E., Milham, R.P., ElRif, P. and Alford, J.L. (2008). Quantitative evaluation of personas as information. In Proceedings of the Human Factors and Ergonomics Society 52nd Annual Meeting, 52(16), 1107-1111. doi:10.1177/154193120805201602.
- Colucci, E. (2007). The “group” as “focus” of focus groups: Issues of analysis and report of focus groups data. *Qualitative Health Research (QHR)*, 17(10), 1422-1433. doi:10.1177/1049732307308129.
- Colucci, E. (2008). On the use of focus groups in cross-cultural research. In P. Liamputtong (Ed.), *Doing Cross-Cultural Research: Ethical and Methodological Perspectives*. Dordrecht, the Netherlands: Springer, 233-252.
- Cooper, A. (1999). *The Inmates Are Running the Asylum: Why High Tech Products Drive Us Crazy and How to Restore the Sanity* (1st ed.). Sams - Pearson Education.
- Cooper, A. (2008). The origin of personas. *Cooper Journal*. Available at [https://www.cooper.com/journal/2008/05/the\\_origin\\_of\\_personas](https://www.cooper.com/journal/2008/05/the_origin_of_personas). Link retrieved September 13, 2017.
- Cooper, A., Reimann, R., and Cronin, D. (2014). *About Face: The Essentials of Interaction Design*. (4th ed.). John Wiley & Sons, Incorporated.
- Cousins, C. (2017). Designing for culture: creating the perfect UX persona. UXpin. Available at <https://www.uxpin.com/studio/blog/designing-for-culture-creating-the-perfect-ux-persona/>. Link retrieved June 4, 2018.
- Danzico, L. (2007). Long live the user (persona): talking with Steve Mulder. In Boxes and Arrows. Available at <http://www.bboxesandarrows.com/view/long-live-the-user-persona-talking-with-steve-mulder/>. Link retrieved December 20, 2017.
- Delli Carpini, M. X., and Williams, B. (1994). The method is the message: Focus groups as a method of social, psychological, and political inquiry. *Research in Micropolitics*, 4, 57-85.
- Dupree, J.-L. W., Lank, E., and Berry, D.M. (2018). A case study of using grounded analysis as a requirement engineering method: Identifying personas that specify privacy and security tool users. *Science of Computer Programming*, 152, 1-37. doi:10.1016/j.scico.2017.08.010.
- Eksiöğlu, M., Kiriş, E., Çapar, B., Selçuk, M. N., and Ouzeir, S. (2011). Heuristic evaluation and usability testing: case study. *Internationalization, Design and Global Development*, 4, 143-151. doi:10.1007/978-3-642-21660-2.
- Farrell, S. (2017). UX research cheat sheet. Nielsen Norman Group. Available at <https://www.nngroup.com/articles/ux-research-cheat-sheet/>. Link retrieved November 19, 2017.

- Ferm, N. (2017). The potential of international talents is not used in Finland. Aalto university student union. Available at <https://aay.fi/blogi/2017/02/09/the-potential-of-international-talents-is-not-used-in-finland/>. Link retrieved April 14, 2018.
- Fernandes, T. (1995). *Global Interface Design: A Guide to Designing International User Interfaces*. AP Professional: Boston, MA.
- Getto, G. and St. Amant, K. (2014). Designing globally, working locally: using personas to develop online communication products for international users. *Communication Design Quarterly Review*, 3(1), 24-46. doi:10.1145/2721882.2721886.
- Grudin, J. (2006). Why Personas Work: The Psychological Evidence. In Pruitt, J. & Adlin T. (eds.), *The Persona Lifecycle: Keeping People in Mind Throughout Product Design*. Morgan Kaufman Publishers, San Francisco.
- Grudin, J. & Pruitt, J. (2002). Personas, participatory design and product development: an infrastructure engagement. In *Proceedings of Participatory Design Conference (PDC)*.
- Guillermo, A. (2016). User persona development guide. Medium. Available at <https://medium.theuxblog.com/user-persona-development-guide-f62909bdfd8a>. Link retrieved September 28, 2018.
- Guðjónsdóttir, R. (2001). Life-size personas. In *Proceedings of the Usability Professionals Conference*.
- Guðjónsdóttir, R. (2006). Story from the field: Using illustrations instead of photos. In Pruitt, J. & Adlin T., *The Persona Lifecycle: Keeping People in Mind Throughout Product Design*. Morgan Kaufman Publishers, San Francisco.
- Guðjónsdóttir, R. (2010). *Personas and Scenarios in Use*. Doctoral Thesis submitted to the Kungliga Tekniska Högskolan in fulfilment of the requirement for the Degree of Doctor in Human-Computer Interaction. Stockholm, Sweden.
- Halualani, R.T., Mendoza, S.L. and Drzewiecka, J.A. (2009). “Critical” junctures in intercultural communication studies: a review. *Review of Communication*, 9 (1), 17-35. doi:10.1080/15358590802169504.
- Hertzum, M., Clemmensen, T., Hornbæk, K., Kumar, J., Shi, Q., and Yammiyavar, P. (2011). Personal usability constructs: how people construe usability across nationalities and stakeholder groups. *International Journal of Human-Computer Interaction*, 27(8), 729-761. doi:10.1080/10447318.2011.555306.
- Hidayanto, A.N., Rofalina, F., and Handayani, P.W. (2015). Influence of perceived quality of university official website to perceived quality of university education and enrollment intention. Chapter 13 in Isais, P., Kommers, P., & Issa, T. (Eds.), *The Evolution of the Internet in the Business Sector: Web 1.0 to Web 3.0*. IGI Global, 278-305. doi:10.4018/978-1-4666-7262-8.ch013.
- Hofstede, G., Hofstede G.J., and Minkov, M. (2010). *Cultures and Organizations - Software of the mind*. New York: McGrawHill.

- ISO 9241-11 (1998). Ergonomic requirements for office work with visual display terminals (VDTs) - Part 11: Guidance on usability. International Organization for Standardisation. Geneva, Switzerland.
- ISO 9241-210 (2010). Ergonomics of human system interaction - Part 210: Human-centered design for interactive systems. International Organization for Standardisation. Geneva, Switzerland.
- Islam, A., and Tsuji, K. (2011). Evaluation of usage of university websites in Bangladesh. *DESIDOC Journal of Library & Information Technology*, 31(6). doi:10.14429/djlit.31.6.1322.
- Issa, T., and Isaias, P. (2015) Sustainable Design. HCI, Usability and Environmental Concerns. Springer-Verlag London.
- Jensen, I., Hautopp, H., Nielsen, L., and Madsen, S. (2017). Developing international personas: a new intercultural communication practice in globalized societies. *Journal of Intercultural Communication*, 43.
- Johansson, M., and Messeter, J. (2005). Present-ing the user: constructing the persona. *Digital Creativity*, 16(4), 231-243. doi:10.1080/14626260500476606.
- Krug, S. (2014). Don't Make Me Think: A Common Sense Approach to Web Usability (2nd ed.). New Riders.
- Lang, T., Kowalski, C., Zrobok, M., and Humphreys, D. (2015). UX of university websites: User needs. Peak Usability. Available at <https://www.peakusability.com.au/articles/ux-of-university-websites-user-needs> Link retrieved November 6, 2017.
- Lidwell, W., Holden, K., and Butler, J. (2010). Universal Principles of Design, Revised and Updated: 125 Ways to Enhance Usability, Influence Perception, Increase Appeal, Make Better Design Decisions, and Teach through Design. Rockport Publishers; Second Edition, Revised and Updated edition.
- Lilley, M., Pyper, A., and Attwood, S. (2012). Understanding the student experience through the use of personas. *Innovations in Teaching and Learning in Information and Computer Sciences*, 11(1), 4-13. doi:10.11120/ital.2012.11010004.
- Long, F. (2009). Real or imaginary: the effectiveness of using personas in product design. In *Proceedings of the Irish Ergonomics Society Annual Conference*, 1–10.
- Madsen, S., Nielsen, L., Jensen, I. and Hautopp, H. (2015). An empirical investigation of the practices and challenges specific to international user studies. In *Proceedings of INTERACT 2015: Part III*. Springer-VS, 132-148, doi:10.1007/978-3-319-22698-9\_10.
- Marsh, N. (2017). Finland: project to attract 100,000 int'l students. The pie news. Available at <https://thepienews.com/news/project-to-attract-100000-intl-students-to-finland/>. Link retrieved April 12, 2018.

- Mentes, A., and Turan, A.H. (2012). Assessing the usability of university websites: an empirical study on Namik Kemal university. *TOJET: The Turkish Online Journal of Educational Technology*, 11(3), 61-69.
- Meyer, K.A. (2008). The “virtual face” of institutions: What do home pages reveal about higher education? *Innovative Higher Education*, 33(3), 141–157. doi:10.1007/s10755-008-9071-2.
- Meyer, K. A. and Jones, S. (2011). Information found and not found: what university websites tell students. *Online Journal of Distance Learning Administration*, 14(3). Available at [http://www.westga.edu/~distance/ojdla/fall143/meyer\\_jones143.html](http://www.westga.edu/~distance/ojdla/fall143/meyer_jones143.html) Link retrieved at November 20, 2017.
- Mifsud, J. (2011). The difference (and relationship) between usability and user experience. *UsabilityGeek*. Available at <https://usabilitygeek.com/the-difference-between-usability-and-user-experience/>. Link retrieved November 2, 2017.
- Morgan, D. M. (1998). The Focus Group Guidebook. In D. L. Morgan, R. A. Krueger & J. A. King (Eds.), *Focus Group Kit* (1st edition). Thousand Oaks, CA: Sage.
- Mortensen, D. (2018). How to do a thematic analysis of user interviews. *International design foundation*. Available at <https://www.interaction-design.org/literature/article/how-to-do-a-thematic-analysis-of-user-interviews>. Link retrieved August 20, 2018.
- Mushtaha, A., and De Troyer, O. (2012). A pyramid of cultural markers for guiding cultural-centered localized website design. In M. Strano, H. Hrachovec, F. Sudweeks and C. Ess (eds), *Proceedings of the 8th International Conference on Cultural Attitudes towards Technology and Communication*, 84-99.
- Myers, M. D. and Tan, F. B. (2003). Beyond models of national culture in information systems research. *Advanced Topics in Global Information Management*, 14-29.
- Nawaz, A. (2013). Website user experience. A cross-cultural study of the relation between users’ cognitive style, context of use, and information architecture of local websites. *Copenhagen business school, PhD Series* 42-2013.
- Nawaz, A., and Clemmensen, T. (2013). Website usability in Asia “from within”: an overview of a decade of literature. *Intl. Journal of Human–Computer Interaction*, 29(4), 256-273. doi:10.1080/10447318.2013.765764.
- Nielsen, L. (2018). Personas. Chapter 30 in Zahirovic, A. et al. (eds.). *The Encyclopedia of Human-Computer Interaction*, 2nd ed. Interaction Design Foundation. Available at <https://www.interaction-design.org/literature/book/the-encyclopedia-of-human-computer-interaction-2nd-ed/personas>. Link retrieved December 7, 2018.
- Nielsen, L., Nielsen, K. S., Billestrup, J. and Stage, J. (2013). Going global with personas. *Proceedings of INTERACT 2013*. Springer-VS. (Lecture Notes in Computer Science, Vol. 8120), 350-357. doi:10.1007/978-3-642-40498-6\_27.



- Nielsen, L., and Storgaard Hansen, K. (2014). Personas is applicable: a study on the use of personas in Denmark. Proceedings of the 32th annual ACM Conference on Human Factors in Computing Systems (CHI), 1665-1674. doi:10.1145/2556288.2557080.
- Ogan, S. (2017). How does culture influence web design? Research maze. Available at <http://www.researchmaze.com/2017/08/03/cultural-impacts-on-web-design/>. Link retrieved May 2, 2018.
- Papadopoulos, T. and Xenos, M. (2008). Quality evaluation of educational websites using heuristic and laboratory methods. In Proceedings of the 2nd Panhellenic Scientific Student Conference on Informatics, Related Technologies, and Applications, 43-54.
- PennState College of Agricultural Sciences (2018). Fictional student personas. Available at <https://agsci.psu.edu/communications/audiences/general/undergraduate-student/personas>. Link retrieved at November 18, 2018.
- Portugal, S. (2008). Persona non-grata. ACM Interactions 15(1), 72-73. doi:10.1145/1330526.1330550.
- Pruitt, J., and Adlin T. (2006). The Persona Lifecycle: Keeping People in Mind Throughout Product Design. Morgan Kaufman Publishers, San Francisco.
- Pruitt, J. and Grudin J. (2003). Personas: practice and theory. In: Proceedings of the 2003 conference on Designing for user experiences (DUX), 1-15. doi:10.1145/997078.997089.
- Quesenbery, W. (2006). Storytelling and narrative. In Pruitt, J. & Adlin T., The Persona Lifecycle: Keeping People in Mind Throughout Product Design. Morgan Kaufman Publishers, San Francisco.
- Quesenbery, W. and Brooks, K. (2010). Storytelling for User Experience: Crafting Stories for Better Design. Rosenfeld Media, 1st edition.
- Reisberg, D. (1997). Cognition: Exploring the Science of the Mind. New York: Norton.
- Righi, C. and James, J. (2007). User-Centered Design Stories. Morgan Kaufmann.
- Rönkkö, K., Hellman, M., Kilander, B. and Dittrich Y. (2004). Personas is not applicable: local remedies interpreted in a wider context. In: Proceedings of the eighth conference on Participatory design (PDC): Artful integration: interweaving media, materials and practices, 112-120. doi:10.1145/1011870.1011884.
- Sherwin, K. (2016). University websites: top 10 design guidelines. Nielsen Norman Group. Available at [www.nngroup.com/articles/university-sites/](http://www.nngroup.com/articles/university-sites/). Link retrieved September 10, 2017.
- Sissors, J.Z. (1966). What is a Market? Journal of Marketing, 30(3).
- Solomon, L. (2017). How to plan website globalization & localization. Search engine people. Available at <https://www.searchenginepeople.com/blog/plan-website-globalization-localization.html>. Link retrieved September 29, 2018.

- Spool, J. M. (2011). Five factors for successful persona projects. *User Interface Engineering*. Available at [https://articles.ue.com/successful\\_persona\\_projects/](https://articles.ue.com/successful_persona_projects/). Link retrieved at May 19, 2017.
- St. Amant, K. (2005). A prototype theory approach to international web site analysis and design. *Technical Communication Quarterly*, 14(1), 73-91. doi:10.1207/s15427625tcq1401\_6.
- Stewart, T. (2008, April 2). Usability or user experience - what's the difference? *Econsultancy*. Available at <https://econsultancy.com/blog/2321-usability-or-user-experience-what-s-the-difference>. Link retrieved November 2, 2017.
- Strauss, A. & Corbin, J. (1990). *Basics of Qualitative Research: Grounded Theory Procedures and Techniques*. Newbury Park, CA: Sage Publications.
- Teivainen, A. (2018). A half of foreign university students are planning on staying in Finland. *Helsinki Times*. Available at <http://www.helsinkitimes.fi/finland/finland-news/domestic/15558-a-half-of-foreign-university-students-are-planning-on-staying-in-finland.html>. Link retrieved May 30, 2018.
- UNESCO Headquarters (2010). Final report. World Conference on Higher Education 2009. Available at <http://unesdoc.unesco.org/images/0018/001892/189242e.pdf>. Link retrieved November 2, 2017.
- University College London (2018). *Personas*. Available at <https://www.ucl.ac.uk/isd/services/websites-apps/best-practice/personas>. Link retrieved November 19, 2018.
- University of Louisiana at Lafayette (2018). *User personas*. Available at <https://web.louisiana.edu/toolbox/user-personas>. Link retrieved November 19, 2018.
- University of St Andrews (2018). *Digital standards service manual: user personas*. Available at <https://www.st-andrews.ac.uk/digital-standards/service-manual/user-personas/>. Link retrieved November 19, 2018.
- Vestergaard, L., Hauge, B., and Hansen, C. T. (2016). Almost like being there; the power of personas when designing for foreign cultures. *CoDesign. International Journal of CoCreation in Design and the Arts*, 12(4). doi:10.1080/15710882.2015.1127385.
- Wilson, J. L., and Meyer, K.A. (2009). Higher education websites: The “virtual face” of diversity. *Journal of Diversity in Higher Education*, 2(2), 91-102. doi: 10.1037/a0015443.
- Würtz, E. (2017). Intercultural communication on web sites: a cross-cultural analysis of web sites from high-context cultures and low-context cultures. *Journal of Computer-Mediated Communication*, 11 (1), 274–299. doi:1083-6101.2006.tb00313.x.

Yerlikaya, Z. and Durdu, P. O. (2017). Usability of university websites: a systematic review. In International Conference on Universal Access in Human-Computer Interaction (UAHCI). Springer, Cham. doi:10.1007/978-3-319-58706-6\_22.

## Appendix 1. Preliminary Personas



### Overview

Name: Tuomas

Age: 24

**Nationality: Finnish**

Current activity: unemployed, just returned from the army service

Applying for: Bachelor's degree in Economics

### Get to know

Hobby: floorball

Social contacts: Tuomas has 2 sisters, but they all live separately from the family where they were born. His father married for the second time recently. Tuomas is the first member of the family who is going to get a university degree. He shares an apartment with one of his friends.

Funding: earnings accumulated before going to the army

### Goals

Experience goal: He wants to feel confident and 100% sure that his actions correspond to the requirements, so nothing on the website can be vague or understood wrongly. Also, he does not want to get too emotional while applying.

End goal: To pass the entrance exam and be given a study place.

Life goal: To obtain a degree successfully to work in his father's company.

### Computer skills

Tuomas is confident user of IT and Internet, as well as mobile apps. He has the basic understanding of software and he is not interested in social networks at all.

### National attributes

**Tuomas is an introvert, his choice has been made after deep considerations, he admits that he can fail and ready for both outcomes. Being Finnish he is aware of Finnish educational setup, school has instilled in him self-discipline.**

### International considerations

**Tuomas happens to have no international friends, although he has nothing against communication with foreigners. He has not travelled much, only to Sweden.**

### Quote

"I care about my future and thus my education"



### Overview

Name: Léa

Age: 20

**Nationality: French**

Current activity: Bachelor's student in University of Orléans in English Language and Linguistics

Applying for: Exchange program in English Language, Literature and Translation

### Get to know

Hobby: travelling

Social contacts: Léa is the only child in a nuclear family, she moved from a smaller city to Orléans to study. She shares an apartment with 3 other students. Every summer she gets part-time jobs and tried to provide her living.

Funding: partly her own money, partly support from her family

### Goals

Experience goal: Léa's friend did the exchange program in UTA 2 years ago, so she expects him to explain everything about the applying process and hopes that nothing has changed since that. She wants to do it very quickly without any complications.

End goal: To send the application plenty good enough to be accepted with minimum efforts.

Life goal: To have fun in Finland for 1 semester, party hard and do minimum studies, travel to Baltic countries and Lapland.

### Computer skills

Léa is a constant user of the Internet, but she prefers to deal with the matters physically, not online. She uses computer and a smartphone for entertainment, studies and communication mainly. She would rather go to the library and read a paper book then use an online version of it.

### National attributes

The decision to go to Finland was taken spontaneously and in case of failure Léa would not get upset, however, she does not think of it. In her home university she gets used to teachers' control, frequent reminders etc. She has been to many places with rich historical and cultural heritage and expect similar from Finland. She is frustrated about endless French bureaucracy and sea of paperwork but used to it. Léa does not doubt that she would get along with Finnish people and make friends with them easily.

### International considerations

Léa has many international friends, she enjoys both online and offline chatting with them, they visit each other and do trips together. She worked as a baby-sitter in Slovenia for one summer and participated in global volunteer movement. However, it is her first time in Scandinavia.

#### Quote

“Going for exchange means a lot of fun”



#### Overview

Name: Fang

Age: 24

Nationality: Chinese

Current activity: works as a reception assistant in China after getting Bachelor's in Business

Applying for: Master's degree in Cultural Studies

#### Get to know

Hobby: cooking

Social contacts: Fang lives with her parents in Chengdu. Her elder sister is married and lives separately. Her family and close friends belong to prosperous social group.

Funding: earnings accumulated within working period

#### Goals

Experience goal: Fang want to feel capable of managing the admission to the university. Some university websites turn her off because the process seemed to be insoluble. Besides, she wants to avoid sending additional letters to the study coordinator for specifications because she is not very familiar with Eastern standards of business email writing.

End goal: to get a chance to have an abroad experience.

Life goal: To marry her boyfriend and start their own business in Europe

**Computer skills:** being online every day, Fang still uses mainly Chinese network. She is not an independent user when it comes to installing some software, removing viruses and malware, upgrading RAM etc.

#### National attributes

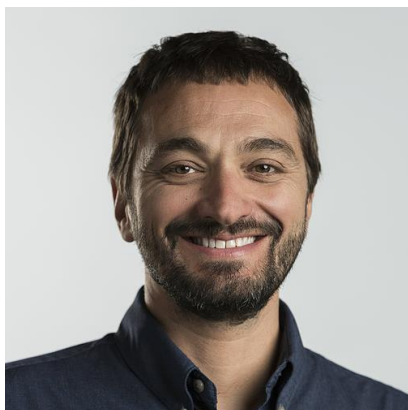
She used to respect her teachers and listen to them. Student-teacher relationship is not peer-to-peer. Fang does not want to go completely out of comfort zone, since relocation itself is a major shift in life.

#### International considerations

Fang is interested in abroad experience so she is surfing the Internet for various international scholarships, internships, volunteering and other options, but her main ambition is to pursue a full degree. She has not been to Finland or any other northern Europe countries. Fang is focused on meeting other Chinese people there rather than making friends with local ones.

#### Quote

“I want to find a second home”



#### Overview

Name: Amir

Age: 34

Nationality: Iranian

Current activity: software developer

Applying for: PhD degree in Interactive Technology

#### Get to know

Hobby: skiing

Social contacts: Amir has a wife and they plan to have kids. He wants to take her to Finland too.

Funding: earnings accumulated within working period

#### Goals

Experience goal: Amir wants to feel well-informed and shrewd about all the options the university can provide. He does not want to miss an opportunity which suits him the best.

End goal: To be enroll for the university

Life goal: To emigrate to Finland via getting an education

#### Computer skills

Having an IT background, Amir is experienced in using the Internet, information processing, communication, content creation, safety and problem solving.

#### National attributes

Amir is quite intolerant to phenomena and ideas which are contrary to the ones he is used to experience in his native environment. In university education students have less freedom and more demanding system.

#### International considerations

He has not much experience in international matters. He is a family man and not really interested in finding local or foreign company

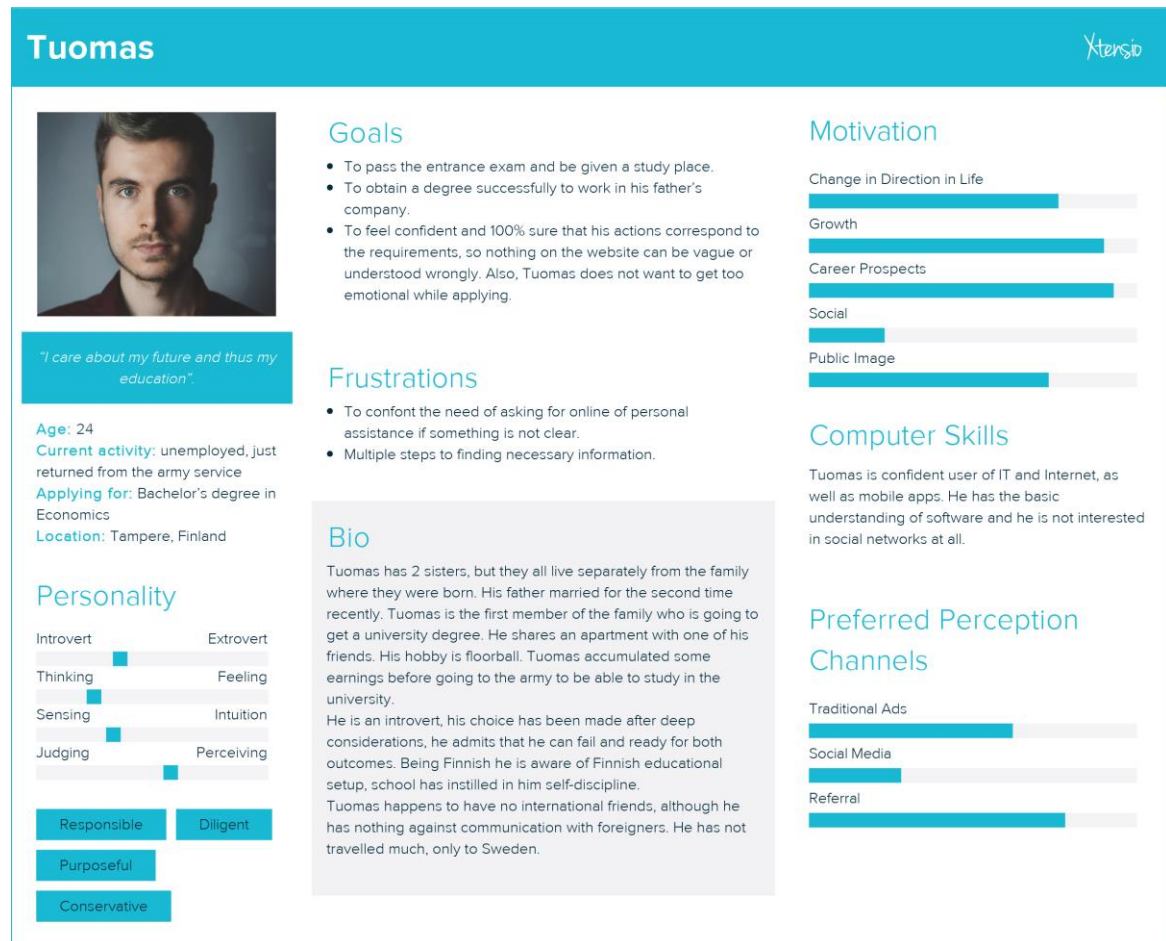
**Quote**

“PhD program is the new beginning in my family’s life”

Pictures are taken from <https://www.pexels.com/>



## Appendix 2. Final personas



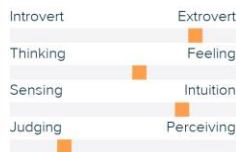


"Going for exchange means a lot of fun".

**Age:** 20

**Current Activity:** Bachelor's student in University of Orléans in English Language and Linguistics  
**Applying for:** Exchange program in English Language, Literature and Translation  
**Location:** Orléans, France

## Personality



Inquisitive

Adventurous

Easy-going

## Goals

- To send the application plenty good enough to be accepted with minimum efforts.
- To have fun in Finland for 1 semester, party hard and do minimum studies, travel to Baltic countries and Lapland.
- Léa's friend did the exchange program in UTA 2 years ago, so she asks him to explain everything about the applying process and hopes that nothing has changed since that. She wants to do it very quickly without any complications. Exploring the website, Léa needs something illustrative about Finland to have a clue what to expect.

## Frustrations

- She is frustrated about endless French bureaucracy and sea of paperwork and wants to avoid it this time
- To fail to get what she expects from the exchange program

## Bio

Léa is the only child in a nuclear family, she moved from a smaller city to Orléans to study. She shares an apartment with 3 other students. Every summer she gets part-time jobs and tried to provide her living, so the funding is funding is partly her own money (including Erasmus scholarship), partly support from her family.

The decision to go to Finland was taken spontaneously and in case of failure Léa would not get upset, however, she does not worry about it beforehand. In her home university she gets used to teachers' control, frequent reminders etc. She has been to many places with rich historical and cultural heritage and expect similar from Finland. Léa does not doubt that she would get along with Finnish people and make friends with them easily.

Léa likes travelling and has many international friends, she enjoys both online and offline chatting with them, they visit each other and do trips together. She worked as a baby-sitter in Slovenia for one summer and participated in global volunteer movement. However, it is her first time in Scandinavia.

## Motivation



## Computer Skills

Léa is a constant user of the Internet, but she prefers to deal with the matters physically, not online. She uses computer and a smartphone for entertainment, studies and communication mainly. She would rather go to the library and read a paper book then use an online version of it.

## Preferred Perception Channels



## Fang

xtensio



"I want to find a second home".

Age: 24

Current activity: works as a reception assistant in China after getting Bachelor's in Business

Applying for: Master's degree in Cultural Studies

Location: Hubei, China

## Personality



## Goals

- To get a chance to have an abroad experience
- Fang wants to feel capable of managing the admission to the university. Some university websites turn her off because the process seemed to be insoluble. What she wants to find on the website is the information about communities of students from her native country.
- To marry her boyfriend and start their own business in Europe

## Frustrations

- To avoid sending additional letters to the study coordinator for specifications because she is not very familiar with Eastern standards of business email writing.
- Not terribly tech savvy - she does not like the process.

## Bio

Fang lives with her parents in Hubei. Her elder sister is married and lives separately. Her family and close friends belong to prosperous social group. She accumulated some earnings within working period to move to Finland to study.

She used to respect her teachers and listen to them. Student-teacher relationship is not peer-to-peer in her native country.

Fang prefers to do group work than individual work and she cares about her grades. Fang does not want to go completely out of comfort zone, since relocation itself is a major shift in life.

Fang is interested in abroad experience so she is surfing the Internet for various international scholarships, internships, volunteering and other options, but her main ambition is to pursue a full degree.

She has not been to Finland or any other northern Europe countries and she is not able to realize how different the environment would be, because she had never experienced this before. She also does not fully realize how studying experience would differ. Fang is focused on meeting other Chinese people there rather than making friends with local ones.

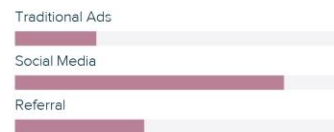
## Motivation



## Computer Skills

Being online every day, Fang still uses mainly Chinese network. She is not an independent user when it comes to installing some software, removing viruses and malware, upgrading RAM etc.

## Preferred Perception Channels



## Amir

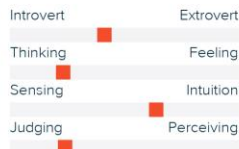
xtensio



"PhD program is the new beginning in my family's life".

**Age:** 34  
**Current Activity:** software developer  
**Applying for:** PhD degree in Interactive Technology  
**Location:** Tehran, Iran

### Personality



Non-flexible

Mature

Conservative

Skilful

### Goals

- To be enroll for the university.
- Amir wants to feel well-informed and shrewd about all the options the university can provide. He does not want to miss an opportunity which suits him the best. He wants to be able to learn from the English page absolutely the same information as if he knows Finnish.
- To emigrate to Finland via getting an education.

### Frustrations

- To be misinformed about such vital things as employment market in Tampere and Finland.

### Bio

Amir has a wife and they plan to have kids. He wants to take her to Finland too.

Amir is quite intolerant to phenomena and ideas which are contrary to the ones he is used to experience in his native environment. In university education students have less freedom and more demanding system.

He has not much experience in international matters. He is a family man and not really interested in finding local or foreign company.

Amir is not used to gender equality and the university website interface is supposed to give him the idea about it.

### Motivation



### Computer Skills

Having an IT background, Amir is experienced in using the Internet, information processing, communication, content creation, safety and problem solving.

### Preferred Perception Channels



### **Appendix 3. Questionnaire for developers**

#### **Section one:**

1. Which team do you belong to?

- Tampere3 project team (communications and IT/UTA, TAMK and TUT webmaster representatives & Product Owner)
- Wunder Finland Oy
- Content planning group for the Education/Admissions section
- Project team for the Student's Guide section
- Project team for the Student's Desktop and intranet services
- TAUCHI researchers
- Other

2. What are your most important concerns in website projects? (e.g., keeping a focus on international users and their questions, keeping a focus on technical implementation details, reuse and scalability etc.)

3. Are you familiar with user personas?

- I do not really know what they are
- I heard about them in my studies
- I have seen them used in projects
- I have developed them

4. Did you use personas as one of the user-centered design methods?

- Yes, they were developed and used
- Partly, they were developed but not used
- No

5. What other methods have been or are planned to be used?

- Usability testing
- Focus groups
- User interviews
- Prototype feedback & testing
- Surveys
- Analytics review
- User stories or scenarios
- Workshops with students
- other

6. I think we have reached a good understanding of the users and their needs in the project.  
Select: Strongly Agree, Agree, Neither Agree Nor Disagree (or Neutral), Disagree or Strongly Disagree

7. We consider multiple cultural backgrounds of Tampere3 website users when developing the website.

Select: Strongly Agree, Agree, Neither Agree Nor Disagree (or Neutral), Disagree or Strongly Disagree

8. I developed 4 user personas for Tampere3 website. Please follow the link to have a look: <http://bit.ly/2P7BBXR> and state your opinion about the following statements:

- The personas are abstract
- The personas help to take into account multiple international backgrounds of the users
- The personas are impersonal
- The personifying details mislead
- The personifying details distract

Select: Strongly Agree, Agree, Neither Agree Nor Disagree (or Neutral), Disagree or Strongly Disagree

## **Section 2:**

9. I saw positive results of the personas use in the Tampere3 website project.

Select: Strongly Agree, Agree, Neither Agree Nor Disagree (or Neutral), Disagree or Strongly Disagree

10. When were the personas engaged into the work?

- From the beginning of the process
- In the middle of the process
- Towards the end of process

## **Section 3:**

9. Please make an assessment of the following statements:

- We thought of introducing personas in our project.
- We deliberately rejected using the persona method.
- We did not have any data that would have been needed in building personas.
- We did not know how to build personas.
- In my opinion, user personas would have been useful in the process

Select: Strongly Agree, Agree, Neither Agree Nor Disagree (or Neutral), Disagree or Strongly Disagree

10. In your opinion, when would building user personas be useful in website development?

- From the beginning of the process
- In the middle of the process
- Towards the end of process
- Never

**Section 4:**

11. In your own work with the Tuni or other Tampere3 web projects, what kind of information about the users has been or would have been most useful? Please mention 1-3 points.